6-1-2020 2:00 PM

The Measurement of Job Satisfaction among Workplace Leaders: Scale Development and Validation of the Leader Satisfaction Assessment

Erica A. Sutherland, *The University of Western Ontario*

Supervisor: Goffin, Richard D., *The University of Western Ontario*

A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in Psychology

Abstract

As one of the most well-researched constructs in I/O psychology, the job attitudes literature is saturated with assessments of job satisfaction. However, none of these measures have explicitly examined the nature of job satisfaction among workplace leaders, a subset of employees who have the potential to influence organizations in substantive and meaningful ways. As such, the purpose of this dissertation was to examine the measurement of job satisfaction among leaders. A series of interviews and open-ended survey questionnaires were administered to a diverse group of leaders, employed across a variety of organizations and industries, to identify what facets contributed most to their satisfaction at work. Unique facets that were identified as important to leaders' satisfaction included Mentorship, Team Development, Strategic Planning, and Transparency. Based on leaders' responses a novel measure of satisfaction, the Leader Satisfaction Assessment (LSA), was created to assess those facets of satisfaction that were important to leaders. Two versions of the LSA were developed (an Extended and a Brief version) to maximize the utility of the measure for both researchers and practitioners. Preliminary validation evidence supporting the LSA-Extended was reviewed by examining the relations between leaders' satisfaction and various work attitudes and behaviours, including core self-evaluations, general mental ability, emotional intelligence, organizational citizenship behaviours (OCBs), counterproductive workplace behaviours (CWBs), organizational commitment, and turnover intentions.

Keywords

job satisfaction; leadership; assessment; exploratory structural equation modeling; bifactor models

Summary for Lay Audience

Job satisfaction is one of the most frequently examined topics in the field of Industrial and Organizational (I/O) psychology. Numerous measures exist to assess employee job satisfaction, yet none of these measures have examined the nature of job satisfaction among a subset of employees – leaders. Workplace leaders have the potential to influence their organization in substantive and meaningful ways and the lack of research into the satisfaction of these leaders is surprising. As such, the purpose of this dissertation was to examine the measurement of job satisfaction among leaders. A series of interviews and open-ended survey questionnaires were administered to a diverse group of leaders, employed across a variety of organizations and industries, to identify what facets contributed most to their satisfaction at work. Unique facets that were identified as important to leaders' satisfaction included Mentorship, Team Development, Strategic Planning, and Transparency. Based on leaders' responses a novel measure of satisfaction, the Leader Satisfaction Assessment (LSA), was created to assess those facets of satisfaction that were important to leaders. Two versions of the LSA were developed (an Extended and a Brief version) to maximize the utility of the measure for both researchers and practitioners. Preliminary evidence supporting the use of the LSA-Extended was reviewed by examining the relations between leaders' satisfaction and various work attitudes and behaviours. These included relations with self-esteem and self-efficacy, intelligence, emotional intelligence, commitment to one's organization, one's intention to leave their position, and engagement in both positive and negative workplace behaviours.

Acknowledgments

I would first like to thank my advisor, Dr. Richard Goffin, for his guidance over these past several years. I have undoubtedly become a better researcher under his direction, and I am grateful to have had the opportunity to learn from him. I would also like to thank each member of my examination committees – Dr. John Meyer, Dr. Jennifer Robertson, Dr. Paul Trembaly, Dr. Sarah Ross, and Dr. Greg Irving. The feedback and insights that each of you provided are greatly appreciated.

There are two individuals I would like to acknowledge for the substantive impact they have had on my career. First, I wish to thank the late Dr. Sampo Paunonen for introducing me to the field of assessment. Dr. Paunonen always spoke with such passion about his work and I am grateful for the principles he taught me. Second, I would like to thank Dr. Julie Carswell, whom I have had the privilege of working alongside for several years now. She constantly encourages me to keep growing, and for that I am grateful.

I would be remiss not to acknowledge my fellow colleagues and friends from psychology. In particular I'd like to thank Dr. Livia Veselka, Brittney Anderson, Jose Espinoza, and Kabir Daljeet. The personal and professional support that each of you have provided over the years cannot be overstated. Thank you for always being there.

To my family and friends, words cannot describe how lucky I am to have such an amazing group of people supporting me. My parents always taught me that there was no obstacle too big that could not be overcome. Knowing that I have the support of these incredible people is what has made this all possible. Last, to my husband Tyler, thank you for being my rock. Your patience and positivity have helped me throughout this journey.

Table of Contents

List of Tables

List of Figures

List of Appendices

Chapter 1

1. Introduction

The topic of job satisfaction has dominated the industrial and organizational (I/O) psychology literature for decades. In fact, it has been suggested that job satisfaction has been studied more than any other construct within the organizational domain (Spector, 1997). Defined by Locke (1976) as "…a pleasureable or positive emotional state resulting from the appraisal of one's job or job experiences" (p. 1304), numerous studies have examined the antecedents, correlates, and consequences of job satisfaction (for a review see Schleicher, Hansen, & Fox, 2011). However, no topic is arguably more important than the accurate and reliable measurement of job satisfaction.

I/O and business journals are saturated with assessments of job satisfaction. Great debates seem to exist around how best to measure this construct. For example, should job satisfaction be studied at the global or facet level? Are multi-item measures necessary, or can single-item assessments suffice? Although each of these questions raise valid concerns, there is perhaps one issue surrounding the measurement of job satisfaction that appears to be relatively overlooked in the literature. That is, are the facets of job satisfaction invariant across levels within an organization?

It seems that most, if not all, job satisfaction measures are targeted towards mid- to lower-level employees. Each of the most popular facet-level job satisfaction measures examine supervision, advancement opportunities, independence, and a number of other factors that could be considered highly relevant to many employees (Smith, Kendall, & Hulin, 1969; Spector, 1985a; Weiss, Dawis, England, & Lofquist, 1967). However, it is unclear if these same facets would be relevant to evaluations of the satisfaction among workplace leaders. For examples, leaders are likely to hold higher positions within an

organization. As such, there may be less opportunities for advancement, yet this may not necessarily mean that they are not satisfied with their position. Similarly, it is plausible that leaders are likely to encounter different challenges than are direct reports. Perhaps the ability to support the growth and development of direct reports, and the ability to have an impact on the strategic direction of the organization would have a significant impact on a leader's satisfaction. If this were the case, it would be important to include such facets in the measurement of job satisfaction, despite the fact that they may not be applicable to those who hold a lower position within the organization.

Although job satisfaction may seem like a somewhat outdated topic to some, articles coming from the applied field would seem to suggest that job satisfaction continues to occupy a relevant space in the workplace. For example, a variety of business magazines ranging from McKinsley Quartely to Harvard Business Review contain articles speculating why leadership development programs so often fail to enact lasting change (Zenger & Folkman, 2014). Although many different factors are discussed, common themes across several sources tend to be a lack of consideration of the role organizational culture can play in day-to-day operations, as well as a prominent focus on the individual rather than interpersonal interactions.

As such, one could argue that supplementing traditional development programs, which often center around competency-based 360 feedback assessments (Solansky, 2010), with an attitude-based assessment that encompasses leaders' experiences with both culture and others, may help to provide a greater context for such development engagements. A measure of job satisfaction that integrates need fullfilment, job design, and trait theories of satisfaction, each of which are discussed in more detail below, could

arguably fill this space. Furthermore, a job satisfaction assessment that specifically targets the unique experiences of leaders would arguably be more relevant within a development context, both practically and statistically, on the basis of the compatability principle, which states that attitudes better predict behaviours when both are measured at the same level of specficity (Ajzen & Fishbein, 1977).

As such, the purpose of this dissertation was to explore the measurement of job satisfaction among leaders. First, the existing literature on the assessment of job satisfaction was reviewed, along with a close examination of several popular measures. Next, the application of this job satisfaction research was discussed within the content of workplace leaders. Last, a series of three studies were conducted wherein the facets of leaders' job satisfaction were identified, a new assessment was developed to measure these facets, and evidence of the validity of this measure was examined using several popular correlates and criterion outcomes discussed in more detail below.

Chapter 2

2. Theories of Job Satisfaction

Over the years, several theories have been put forth to explain job satisfaction and its impact on workplace behaviours. Each of these theories differ in how job satisfaction is conceptualized, which has important implications for measurement. What follows is a review of three prominent categories of job satisfaction theories: need fulfillment, job design, and dispositional. Within each category, theories that have advanced our understanding of the field, that have informed the creation of popular job satisfaction measures, or for which there is considerable empirical support are reviewed. Although not an exhaustive list, this discussion is meant to summarize key theories that have had an impact on the measurement of job satisfaction.

2.1 Need Fulfillment Theories

Some of the earliest theories of job satisfaction centred on the notion of satisfaction as resulting from the fulfillment of needs. Intuitively, this idea seems logical – by definition satisfaction and need are intertwined, as noted by Dawis (2004), "there is no *satisfaction* unless there were a prior *need*" (p.473). The earliest conceptualization of job satisfaction as need fulfillment can be traced back to Schaffer (1953).

In his seminal 1953 paper, Schaffer outlined his theory of job satisfaction as related to need satisfaction. Schaffer argued that the psychological mechanisms that lead to satisfaction or dissatisfaction were consistent across different domains within an indiviudal's life. Satisfaction with work, he argued, was not a unique experience. Rather, the mechanisms that led individuals to be satisfied with other areas of their lives were the same that led to satisfasction in the workplace. Furthermore, Schaffer argued that dissatisfaction occurred when an individual was unable to satisfy certain needs, and the

amount of dissatisfaction was determined by the strength of the need and the extent to which the need could be fulfilled. Formally stated, Schaffer's theory proposed that:

> *"Overall job satisfaction will vary directly with the extent to which those needs of an individual which can be satisfied in a job are actually satisfied; the stronger the need, the more closely will job satisfaction depend on its fulfillment." (p.3)*

Since Schaffer (1953) argued that satisfaction with work should be no different from satisfaction with other areas of one's life, he based his workplace needs on Murray's (1938) need system. The 12 needs identified by Schaffer are presented in Table 1. The Minnesota Satsifaction Questionnaire (MSQ) developed by Weiss et al. (1967) was based, in large part, on Schaffer's need fulfillment theory of satsifaction. The MSQ continues to be one of the most popular facet level measures of job satisfaction, with over 3 500 citations to date. The MSQ, along with additional measures of job satsifaction are described in more detail in Chapter 4.

Table 1

Schaffer's (1953) Job Satisfaction Needs

Need	Definition
Recognition and Approbation	Need for self and one's work to be noticed and approved by others
Affection and Interpersonal Relationships	Need for acceptance and belonging
Mastery and Achievement	Need to perform according to one's own standards
Dominance	Need for power and control over others
Social Welfare	Need to help others
Self-Expression	Need for congruence between one's self identity and one's behaviour
Socioeconomic Status	Need to financially support oneself and their family
Moral Value Scheme	Need for consistency between one's behaviour and one's moral code
Dependence	Need to be controlled by others
Creativity and Change	Need for opportunities to problem solve and produce original and innovative ideas
Economic Security	Need for assurance of continued income
Independence	Need for opportunity to direct one's own behaviour

2.2 Job Design Theories

Whereas need fulfillment theories of job satisfaction focus on how individual differences impact worker attitudes, job design theories highlight the importance of characteristics of the job and how they impact satisfaction. Coinciding with the cognitive era of psychology, early job design theories sought to identify quantifiable aspects of one's job that were likely to be associated with higher satisfaction (Judge, Weiss, Kammeyer-Mueller, & Hulin, 2017). Termed the calculative perspective by Judge and colleagues, these theories postulated that individuals determined their satisfaction through a rational, cognitive process. That is, characteristics of one's job were thought to contribute to satisfaction to the extent that they were present and one placed value on that particular characteristic (Locke, 1969). Alternatively, Wanous and Lawler (1972) proposed that the evaluation was made my comparing one's actual job to some ideal version of the job that they held.

Herzberg, Mausner, and Snyderman introduced one of the first popular job design theories of satisfaction in 1959 with the Two-Factor Theory of satisfaction. Herzberg and colleagues argued that satisfaction and disatisfaction were two separate and independent constructs, each predicted by a unique cluster of factors – motivators and hygienes. When present, motivators were thought to contribute to satisfaction, but when absent would result in a neutral attitude toward one's job. In contrast, the presence of hygienes was seen as necessary to avoid dissatisfaction.

Unfortunately there has been little empirical support for the Two-Factor Theory (Riggio, 1990), and researchers have struggled to replicate two distinct factors (Schneider & Locke, 1971). However, there is evidence to suggests that positive and negative affect may have distinct influences on attitudes, which can impact the extent to which

individuals approach or avoid certain behaviours (DeShon & Gillespie, 2005; Tellegen, Watson, & Clark, 1999). In their 100 year review of the job attitudes literature, Judge et al. (2017) called for more research into these attitude systems and how they may help to update the theoretical and empirical bases of the Two-Factor Theory.

In short, Herzberg et al.'s (1959) Two-Factory Theory laid the foundation for later job design theories of satisfaction, including the Job Characteristics Model (JCM). First introduced by Hackman and Oldham in 1976, the JCM states that certain characteristics of a job can motivate individuals by enriching the environment so that work becomes intrinsically motivating. Then, when employee feel intrinsically motivated they are more likely to experience high job satisfaction.

The JCM states that three psychological states are necessary in order for individuals to feel motivated: they must feel their work is meaningful, they must have a sense of responsibility over their work, and they must have some knowledge of the result of their work. The JCM also outlines five core job characteristics that influence these psychological states: skill variety, task identity, task significance, autonomy, and feedback.

Hackman and Oldham (1976) also hypothesized that certain variables may moderate this process. Drawing on the need fullfilment literature, they identified individual differences in growth need strength as having a significant impact on the JCM. As suggested by the name, growth need strength refers to an individuals' need and desire for personal development within their job (Hackman & Oldham, 1975). As such, Hackman and Oldham (1976) argued that improving the five core job characteristics will only have a motivating effect on employees if they are high in growth need strength.

Those who are low in growth need strength are not expected to be motivated by increased autonomy and responsibility.

The JCM has remained one of the most researched theories of job satisfaction. Indeed, several meta-analytic studies have found support for the three-state model (Behson, Eddy, & Loresnzet, 2000; Fried & Ferris, 1987), as well as the moderating effect of growth need strength (Loher, Noe, Moeller, & Fitzgerald, 1985; Spector, 1985b). Collectively, job design theories highlight the importance of studying individual facets of satisfaction. However, as discussed in Chapter 4, their reliance on aggregating facet-level measures into an overall assessment of satisfaction is problematic.

2.3 Dispositonal Approach

The final category of job satisfaction theories emerged as empirical research found relatively high stability in individuals' job satisfaction ratings over time (Levin & Stokes, 1989; Pulakos & Schmitt, 1983; Staw & Ross, 1985). For example, a meta-analysis by Dorman and Zapf (2001) found a corrected correlation coefficient of .50 between job satisfaction scores measured an average of three years apart. In addition, behavioural genetic studies have found evidence of heritability of job satisfaction, reporting that approximately 30% of the variance in general job satisfaction may be attributable to genetic factors (Arvey, Bouchard, Segal, & Abraham, 1989; Arvey, McCall, Bouchard, Taubman, & Cavanaugh, 1994). Findings such as these led several researchers to hypothesize that job satisfaction may, in part, be due to stable dispositional factors (Staw & Ross). Several traits have been studied in relation to job satisfaction, the most prominent of which are those defined by the Five Factor Model (FFM) of personality (Costa & McCrae, 1992) and core self-evaluations (Judge, Locke, & Durham,

1997). Each of these models have received considerable empirical support, which is summarized in Table 2. For a more thorough review of these findings, see Chapter 3.

Although many meta-analyses have found evidence of dispositional sources of job satisfaction, it is important to note that supporters of this approach were careful not to discount the importance of the work context (Steel & Rentsch, 1997). Considering the fact that Dormann and Zapft (2001) found the stability estimates of satisfaction to be lower for those individuals who changed jobs (r = .35) than for those who remained in the same position (r = .48) there is certainly evidence to suggest that environmental factors also influence satisfaction.

It is clear that job satisfaction is a complex, multi-faceted construct that is influenced by both individual differences and environmental elements. As a result, researchers must be careful to consider both sets of factors, as well as the interaction between the two, when examining this important workplace attitude. Next, key findings in the job satisfaction literature are discussed to provide an overview of the nomological network.

Table 2

Summary of Dispositional Correlates of Job Satisfaction

Trait	Rationale	Average ρ	References
Five Factor Model			
Neuroticism[1]	when high, tends to interpret ambiguous stimuli negatively	-.29	Judge, Heller, & Mount (2002)
Extraversion	when high, tends to experience positive life events and to find social interactions (such as those at work) more rewarding	.25	Judge, Heller, & Mount (2002)
Conscientiousness	when high, related positively to general work tendencies and performance	.26	Judge, Heller, & Mount (2002)
Agreeableness	when high, tends to be highly motivated to form well-functioning relationships, which may lead to greater happiness and well-being in general, therefore weaker relation expected	.17	Judge, Heller, & Mount (2002)
Openness to Experience	when high, tend to experience both positive and negative emotions more intensely, therefore no significant relation expected	.02	Judge, Heller, & Mount (2002)
Core Self-Evaluations			
Self-Esteem	when high, a driving force behind positive affect, which is associated with positive emotions in general, and therefore being more likely to experience happiness at work	.26	Judge & Bono (2001)
Generalized Self-Efficacy	when high, one is more likely to feel confident in their abilities at work, as well as their ability to cope with various life experiences	.45	Judge & Bono (2001)
Locus of Control	when one feels they have control over the events of their life they are more likely to experience high levels of job satisfaction because they feel responsible for their own happiness; similarly, if an individual is not satisfied with their job, they will be more likely to take steps to change the situation if they hold an internal locus of control	.32	Judge & Bono (2001)

Note. [1]Neuroticism is included in both the Five Factor and Core Self-Evaluations models. ρ = estimated true score correlation based on meta-analytic findings.

Chapter 3

3. Job Satisfaction's Nomological Network

When creating a new measure of a well-established construct, it is important to examine the construct and criterion validity of that measure by investigating its place within the existing nomological network of the construct (Hinkin, 1998). What follows is a review of antecedents, correlates, and outcomes that are frequently studied in relation to job satisfaction. Based on the review of this literature, hypotheses and research questions are proposed in Chapter 6 to examine preliminary validity evidence for the proposed measure of leader satisfaction.

3.1 Individual Differences

As discussed previously, individual differences have been theorized to have a significant impact on one's job satisfaction since they can predispose individuals to experience certain events more than others, or to interpret stimuli in a particular manner (Dorman & Zapf, 2001). Positive and negative affect were among the first traits to be examined as important dispositional sources of job satisfaction (Judge & Locke, 1993; Levin & Stokes, 1989). Watson, Clark, and Tellegen (1988) noted that individuals who displayed high positive affect were more likely to experience positive emotions in general, and therefore were more likely to experience happiness and satisfaction at work. In contrast, those who displayed high negative affect were predisposed to experience negative emotionality, and therefore were less likely to be satisfied with their jobs. A meta-analysis by Connolly and Viswesvaran (2000) found support for this hypothesis, reporting corrected correlations between job satisfaction and positive affect (ρ = .49) and negative affect (ρ = -.33) in the expected directions.

Judge, Heller, and Mount (2002) noted that although investigations of positive and negative affect did much to advance research into dispositional sources of job satisfaction, the typology was limited by its examination of only two personality traits. Judge et al. hypothesized that additional traits described by the FFM (Costa & McCrae, 1992) may be important for job satisfaction. In particular, they argued Neuroticism was likely to be negatively associated with job satisfaction because those high in Neuroticism tend to experience a greater number of negative life events than those who score lower on the dimension (Magnus, Diener, Fujita, & Pavot, 1993). In addition, those high in Neuroticism are also more likely to interpret ambiguous stimuli in a negative way (Byrne & Eysenck, 1993). These predictions were supported in Judge et al.'s meta-analytic investigation of the FFM and job satisfaction, with a corrected correlation of ρ = -.29 between Neuroticism and global job satisfaction.

Judge et al. (2002) also hypothesized that Extraversion would be positively correlated with job satisfaction since Extraverts are predisposed to experience positive life events and to find social interactions (such as those at work) more rewarding (Magnus et al., 1993). Again, this prediction was supported as a corrected correlation of ρ = .25 was found between Extraversion and satisfaction with work. With respect to Conscientiousness, researchers have found this trait to be related to general work tendencies and performance (Dudley, Orvis, Lebiecki, & Cortina, 2006) and therefore these individuals may be more likely to receive rewards and recognition. According to the JCM, these outcomes should result in higher job satisfaction. As such, Judge et al. predicted that Conscientiousness would also be positively related to job satisfaction, and again this was supported by their meta-analytic findings (ρ = .26).

Agreeableness was hypothesized to impact job satisfaction indirectly (Judge et al., 2002), such that agreeable individuals tend to be highly motivated to form well-functioning interpersonal relationships (Harris & Vazire, 2016), which may lead to greater happiness and well-being in general (Jensen-Campbell, Knack, & Gomez, 2010). Results supported this hypothesis, with a correlation of $\rho = .17$ observed between Agreeableness and job satisfaction. Last, Judge et al. anticipated that Openness to Experience would be unrelated to job satisfaction. Open individuals tend to experience both positive and negative emotions more intensely than others (DeNeve & Cooper, 1998) and are more likely to simultaneously experience both positive and negative emotions (Barford & Smillie, 2016). Therefore, Openness should not be significantly correlated with satisfaction. Meta-analytic results supported this hypothesis as well ($\rho = .02$).

The last taxonomy that has been identified as important to understanding the influence of personality on job satisfaction was first identified by Judge et al. (1997). Termed core self-evaluations, this taxonomy describes a set of four traits: self-esteem, generalized self-efficacy, locus of control, and Neuroticism. Together, these traits reflect "…fundamental, subconscious conclusions individuals reach about themselves, other people, and the world." (Judge, Locke, Durham, & Kluger, 1998, p. 18). As such, core self-evaluations were thought to impact job satisfaction because of their influence on one's perception of their job. This model suggests that individuals may react differently to increased job responsibilities depending on how competent they perceived themselves to be (Judge et al., 1998). In this way, the theory of core self-evaluations is similar to the moderated JCM proposed by Hackman and Oldham (1976).

Within the core self-evaluations construct, self-esteem is described by Judge et al. (1998) as the most fundamental core evaluation. This is because self-esteem refers to the overall value one places on themselves (Harter, 1990). As such, self-esteem has been hypothesized to be the driving force behind positive affect. Related to self-esteem, generalized self-efficacy refers to one's perception or confidence in their ability. Judge et al. noted that generalized self-efficacy also refers to one's perceived ability to cope with various life experiences, and therefore was expected to significantly influence how work events impacted one's appraisal of their job.

The third trait within the core self-evaluation domain is locus of control. Individuals with an internal locus of control believe that they exert influence and control over the events in their lives, whereas those with an external locus of control believe things just "happen" to them and that these events are beyond their control (Rotter, 1966). Believing one has control over the events of their life is linked to increased satisfaction at work because the individual feels responsible for their own happiness. That is to say, if one were not satisfied with their job, it is hypothesized that they would be more likely to take steps to change the situation (Spector, 1982). Last, as previously discussed, Neuroticism has been negatively linked to job satisfaction for several reasons. In general, Neuroticism is thought to act as a sort of filter through which environmental stimuli (including those at work) are interpreted.

The core self-evaluations approach to job satisfaction has received considerable research attention over the past two decades. Meta-analytic studies (Judge & Bono, 2001) estimate the true correlation between job satisfaction and the four core self-evaluation traits to range from ρ = .24 (emotional stability; the inverse of Neuroticism) to ρ = .45

(generalized self-efficacy), with an average correlation of ρ = .32. In a comparison of the three dispositional taxonomies (positive-negative affect, FFM, and core self-evaluations) Judge, Heller, and Klinger (2008) concluded that although each of the three taxonomies explained a significant amount of variance in job satisfaction, only core self-evaluations accounted for unique incremental variance.

These findings suggest that core self-evaluations capture unique dispositional facets, beyond the traditional FFM, that are important to consider when examining individual differences in job satisfaction. In addition, researchers have demonstrated that those individuals with high core self-evaluations may tend to seek tasks with higher complexity (Strivastava, Locke, Judge, & Adams, 2010). As discussed below, individuals who occupy more complex jobs tend to be more satisfied because these types of positions are more likely to contain the characteristics that JCM predicts will contribute to satisfaction (Hackman & Oldham, 1976).

3.2 Cognitive Ability and Emotional Intelligence

The study of cognitive ability in the workplace has predominately focused on its impact on performance and career success (Dreher & Bretz, 1991; Hunter, 1986). However, there has recently been a call for more research on the relation between cognition and attitudes, such as job satisfaction (Judge & Kammeyer-Mueller, 2012). In response, researchers have postulated a positive relation between cognitive ability and job satisfaction, with the gravitation model being used to explain this link (Gonzalez-Mule, Carter, & Mount, 2017).

According to the gravitation model, individuals will be attracted to jobs that are a good match for their capabilities (McCormic, Jeanneret, & Mecham, 1972). It follows that employees who occupy positions that are a good fit for their abilities are more likely

to be successful and therefore remain in those roles. As such, individuals with higher cognitive ability are more likely to occupy high-complexity positions, where complex jobs are defined as those that are challenging and cognitively demanding. It is also common for these complex jobs to have greater autonomy and task significance, which job design theories predict will be associated with more positive attitudes towards one job because they fulfill our psychological need for autonomy, relatedness, and competence (Hackman & Oldham, 1976; Ryan & Deci, 2000). Therefore, we can expect that cognitive ability will be positively correlated with job satisfaction, and research has supported this prediction. However, the nature of this relation tends to be quite small (ρ = .05) and may in part be mediated by job complexity (Gonzalez-Mule et al., 2017).

In recent decades researchers have come to accept the inclusion of emotional intelligence (EI) in comprehensive discussions of intelligence, where EI is defined "…as the set of abilities (verbal and non-verbal) that enable a person to generate, recognize, express, understand, and evaluate their own, and others, emotions…" (Van Rooy & Viswesvaran, 2004, p. 72). Yet despite its popularity, relatively little is known about the mechanism by which EI influences various work attitudes, including job satisfaction.

Meta-analytic findings demonstrate a modest, yet positive relation between EI and job satisfaction, with stronger effects observed when trait-based measures of EI are employed (ρ = .32) rather than ability-based measures (ρ = .08) (Miao, Humphrey, & Qian, 2017). In addition, EI has been found to contribute incremental validity in the prediction of job satisfaction over both cognitive ability and dispositional traits measured by the FFM (Miao et al.). One mechanism by which EI may influence job satisfaction is through emotion regulation. Emotionally intelligent individuals are better able to regulate

their affective response to real or perceived stressors (Mikolajczak, Roy, Luminet, Fillee, & de Timary, 2007; Salovey, Stroud, Woolery, & Epel, 2002). As such, one might expect that when an employee experiences negative events at work, the degree to which they are able to regulate their response may serve to buffer against the impact of these events on their job satisfaction.

3.3 Performance

Early theorists speculated that happy and satisfied employees would perform better than less satisfied employees (Vroom, 1964). Although this hypothesis seemed rater intuitive, and was based in part on results from the infamous Hawthorne studies (Schwab & Cummings, 1970), initial empirical investigations did not find support for the relationship. Instead, several researchers noted that the relation between satisfaction and performance was minimal, or in some cases, non-existent (Steers, 1981). This belief dominated the field after a meta-analysis by Iaffaldano and Muchinsky (1985) reported a true correlation of $\rho = .17$ between job satisfaction and job performance. This finding led the authors and others (Brief, 1998; Côté, 1999; Spector, 1997) to conclude that no substantial relationship existed between satisfaction and performance.

However, in 2001, Judge, Thoresen, Bono, and Patton published a qualitative and quantitative review of the job satisfaction-performance literature. This review cited several limitations and misinterpretations of Iaffaldano and Muchinsky's (1985) findings, the most prominent of which was their use of facet job satisfaction rather than global satisfaction. In their analyses, Iaffaldano and Muchinsky included correlations between performance and each facet of job satisfaction. They then averaged all these correlations to arrive at an estimate of the true relationship between job satisfaction and performance. However, this approach was criticized by several researchers (Hunter & Schmidt, 1990;

Wanous, Sullivan, & Malinak, 1989). In particular, Judge et al. (2001) made reference to the compatibility principle, which states that attitudes best predict behaviour when they are measured at the same level of specificity as one another (Ajzen & Fishbein, 1977). Therefore, Judge et al. (2001) noted that it was important to assess global rather than facet job satisfaction "…in order to achieve construct correspondence with respect to the satisfaction-performance relationship…" (p.383); failure to do so likely led Iaffaldano and Muchinsky to produce a downward estimate of the true relationship (Hulin, 1991). In fact, when Judge et al. (2001) reanalyzed Iaffaldano and Muchinsky's data using composite satisfaction score correlations rather than individual facet correlations, they estimated the true correlation with performance to be $\rho = .25$. Also, in their own review Judge et al. (2001) meta-analyzed results from 312 studies using over 50 000 employees and estimated the true correlation between satisfaction and performance to be $\rho = .30$.

In the time since Judge et al.'s (2001) influential meta-analyses, additional research into the job satisfaction-performance link has continued. In particular, these investigations have examined the relation between job satisfaction and more non-traditional dimensions of performance such as contextual performance and counterproductive work behaviours (CWBs). It was first argued by Organ in 1977 and again in 1988 that job satisfaction may be more strongly correlated with informal role behaviours, such as helping coworkers, than with narrowly defined task performance. The relation between job satisfaction and traditional, task-based measures of performance may be modest, at best, given the fact that there are many factors that contribute to success beyond one's attitude about their job (Crede, Chernyshenko, Stark, Dalal, & Bashshur, 2007). For example, task performance is highly dependent on other factors

such as cognitive ability and procedural knowledge (Hunter, 1986). As such, satisfaction is just one contributing factor to this dimension of performance. However, it has been argued that attitudes are much more likely to have a significant impact on areas of job performance that are less influenced by ability (Crede et al.). Therefore, job satisfaction should display stronger correlations with contextual performance and CWBs.

According to Social Exchange Theory (Thibaut & Kelley, 1959) and the norm of reciprocity (Gouldner, 1960), employees working in an environment that they find satisfying will respond to these conditions by acting in a way that benefits the organization and the people in it. This can take the form of contextual performance or organizational citizenship behaviours (OCBs). Similarly, when employees perceive unfavourable treatment, they may become angry and dissatisfied, reciprocating these feelings back to the organization in the form of deviant behaviour. It is presumed that this sort of cathartic adjustment strategy would help to restore an employee's sense of control over their work environment (Dalal, 2005; Mount, Ilies, & Johnson, 2006).

Empirical evidence seems to support the directionality of these relations between job satisfaction and organizational behaviour, with several meta-analyses having reported corrected correlational values of ρ = .16 to .28 for OCBs and ρ = -.37 for CWBs (Ilies, Fulmer, Spitzmuller, & Johnson, 2009; Dalal, 2005). Although it could be argued that these relations may be somewhat contaminated by the common influence of dispositional factors (Organ & Lingl, 1995; Spector, 2011), researchers have demonstrated that job satisfaction only partially mediates the relation between personality and these workplace behaviours (Mount et al., 2006).

As discussed previously, attitudes are impacted by both dispositional and non-dispositional factors. As such, and as demonstrated by Mount et al. (2006), job satisfaction would be expected to explain incremental validity in OCBs and CWBs beyond personality. The impact of this incremental validity is evident in the findings that employees report engaging in more deviant behaviors on days when they also report less satisfaction with their jobs (Judge, Scott, & Ilies, 2006). In accordance with Affective Events Theory (Weiss & Cropanzano, 1996), this would suggest that workplace events can have short-term effects on affect that lower job satisfaction and subsequently lead to CWBs (Crede et al., 2007). Given that EI, and emotion regulation in particular, can influence how these workplace events are experienced, it is possible that EI may moderate the effect of negative events on job satisfaction and the likelihood of engaging in CWBs.

3.4 Commitment and Turnover

Conceptually, job satisfaction can have numerous effects on an organization, one of which is whether individuals chose to stay within the organization. Employee turnover, especially when it is involuntary, can be quite costly for organizations. This may be particularly true of turnover at the leader level, since organizations often invest a large portion of their resources in these employees. Many job enrichment programs are intended to increase employee satisfaction in the hopes that these individuals will remain with the organization (McEvoy & Cascio, 1985). As such, understanding the link between satisfaction and intentions to quit is quite critical for practitioners.

Meta-analytic studies have consistently demonstrated a negative association between job satisfaction and turnover intentions, with one such study estimating the true relation to be ρ = -.58 (Zimmerman, 2008). However, researchers disagree with respect to

the mechanism behind this relationship. As summarized by Hom, Lee, Shaw, and Hausknecht (2017), a number of explanations have been proposed to understand this relation, including linear progression models (Mobley, 1977), the importance of labor market trends (Price, 1977; Price & Mueller, 1981), and met expectations theory (Porter & Steers, 1973). Currently dominating the field is Lee and Mitchell's (1994) Unfolding Method, which describes four distinct paths by which turnover occurs. According to this model, the conventional affect-initiated relation is just one of four paths. As such, we would expect job satisfaction to be negatively correlated with turnover, though the nature of this relation may not be as strong as previously thought, given the other potential paths (i.e., unsolicited job offers, image violations, and matching script).

Understanding the role that organizational commitment plays in the satisfaction – turnover relationship is essential. Meyer and Allen (1991) proposed a three-component model of organizational commitment that assessed affective, continuance, and normative commitment. Affective commitment refers to one's emotional attachment and involvement with their organization. In contrast, continuance commitment refers to a need to remain with an organization because the perceived costs of leaving are too high. Last, normative commitment refers to a sense of responsibility to remain loyal to one's company or to fulfill some sort of moral obligation. Most research examining the relation between satisfaction, commitment, and turnover has studied the affective component of this theory.

As summarized by Tett and Meyer (1993), three models have been proposed to explain the interactions between job satisfaction, commitment, and turnover: *satisfaction-to-commitment, commitment-to-satisfaction,* and *independent effects models* (Porter,

Steers, Mowday, & Boulian, 1974; Salancik & Pfeffer, 1978). Tett and Meyer's meta-analytic comparison of these three models found support for the *independent-effects model*, which states that satisfaction and commitment are related, but distinct constructs, and that each individually adds unique incremental prediction to turnover intentions.

However, researchers have still not reached a consensus as to which of the three models is accurate. For example, a recent study by Mathieu, Fabi, Lacoursière, and Raymond (2016) failed to find evidence of a direct link between satisfaction and turnover intentions, instead finding support for the *satisfaction-to-commitment mediated model*, which suggests that job satisfaction has an indirect effect on turnover intentions through its impact on organizational commitment. This lack of consensus has led some researchers to instead consider satisfaction and commitment correlates due to the continuing debate of causality between the two constructs (Mathieu & Zajac, 1990; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002).

Chapter 4

4. The Measurement of Job Satisfaction

Over the past several decades, our understanding of job satisfaction, its antecedents, and its impact on various aspects of work has expanded greatly. It is important that any new contributions to the study of job satisfaction be situated within this existing nomological network, and this includes the creation of a new measure of the construct. Missing from the previous review of the nomological network is an understanding of how job satisfaction is measured, and the implications of measurement on these relations. What follows is a discussion of important considerations in the measurement of job satisfaction, with an overview of some of the most popular assessments to-date.

4.1 Global versus Facet-Level Satisfaction

With few exceptions, the literature reviewed in Chapter 3 predominately focused on global assessments of job satisfaction. Global assessments provide an estimate of one's overall feelings about their job, whereas facet-level measures attempt to distinguish between the different aspects of job satisfaction with the use of homogeneous subscales (Ironson, Smith, Brannick, Gibson, & Paul, 1989). Although there is some debate among researchers as to which level of assessment is best (Roznowski, 1989), it is often suggested that the optimal conceptualization depends upon the way in which the assessment will be used (Ironson et al.). That is, global conceptualizations are useful for a broad focus and policy makers who may wish to examine longitudinal trends, whereas facets may be useful for identifying areas where an organization could improve satisfaction or would like to explain reasons for turnover (Scarpello & Campbell, 1983).

Facet-level job satisfaction is often measured with traditional attitude-based assessments. Examples and detailed descriptions of such assessments are provided below. However, global job satisfaction has typically been measured in two distinct ways. First respondents may be asked to provide an overall impression of their job satisfaction and are often given a prompt of "all things considered…" or some similar form. These global attitudes can be evaluated with a single-item assessment such as the Faces scale (Kunin, 1955) or with a multi-item measure such as the Jobs in General Scale (Ironson et al., 1989). The merits of single- versus multi-item assessments will be discussed later in this review.

The second way that global job satisfaction is often measured in the literature is through the use of aggregation across facet-level subscales to arrive at a composite measure of satisfaction. This approach was first suggested by Locke (1969) who defined overall job satisfaction as "…the sum of the evaluations of the discriminable elements of which the job is composed." (p.330). The Job Descriptive Index (JDI) (Smith et al., 1969) is arguably the most popular measure of facet-level job satisfaction and although it was developed to assess five distinct facets of satisfaction (work, pay, promotion, supervision, and coworkers), many researchers aggregate scores across each of these facets to compute a general, or global score (Spector, 1997). A similar scoring method has also been reported for other facet measures including the MSQ (Weiss et al., 1967) and the Job Satisfaction Survey (JSS) (Spector, 1985a). Although this composite method of measurement may seem ideal because it allows for the assessment of both global and facet-level satisfaction through the administration of a single scale, this practice is contentious.

The rationale for creating a composite satisfaction score from facet-level assessments stems from the fact that facets are often highly correlated with each other and with global measures of satisfaction (Scarpello & Campbell, 1983). However, as noted by Ironson et al. (1989), this may not be sufficient to justify aggregation. For example, although the scales of the MSQ have been found to be highly correlated (Gillet & Schwab, 1975), the JDI subscales are only moderately correlated (Smith et al., 1969). Therefore, although the MSQ can be considered relatively unidimensional, the JDI may not be. As such, to aggregate the JDI facets into a composite satisfaction score would be inappropriate.

Beyond this statistical limitation, there are several theoretical assumptions that must be made in order to combine facet measures into a global score. First, valid aggregation assumes that the facets being combined are representative of *all* possible facets of job satisfaction. If any dimensions of satisfaction are missing from the measured facets then the resulting composite would not be an accurate representation of the construct (Spector, 1997). In an attempt to determine if there were aspects of satisfaction not captured by the MSQ, Scarpello and Campbell (1983) conducted a series of semi-structured interviews and found five unique facets of satisfaction not assessed by the MSQ (flexibility of hours, appropriate tools and equipment, adequate work space, co-worker facilitators of work, and pleasantness of interactions with people at work). Highhouse and Becker (1993) similarly found evidence that facet measures did not contain all the elements of global satisfaction. These results suggest that aggregation of facets may not be appropriate due to a lack of coverage of the broader construct.

The argument has also been made that facet and global measures of job satisfaction ask respondents to use different frames of reference when evaluating their work attitudes (Ironson et al., 1989). Global measures tend to be quite general and ask for an overall impression. In contrast, facet measures are more likely to be specific and descriptive (i.e., of particular situations or experiences). As such, Ironson et al. suggested that facet scales may elicit more short-term responses than global measures do. This proposition seems to remain untested and its impact on the validity of composite measures is unclear.

Last, researchers have also questioned the relatively simple manner in which facet scores are aggregated. A linear combination of scales suggests that each facet contributes equally to job satisfaction (Ironson et al., 1989; Spector, 1997). Although Aldag and Brief (1978) found that linear models did predict overall job satisfaction, they also found that nonlinear alternatives predicted satisfaction with relatively the same accuracy. A similar result was obtained from Ferratt (1981), who also found linear combinations of facets to account for less than 50% of the variance in overall satisfaction scores. In addition, Jackson and Corr (2002) reported a lack of support for a linear model of aggregation.

Taken together, these results suggest that researchers should be cautious about aggregating facet measures of satisfaction and that perhaps it is best to use distinct scales for global and facet-level investigations. Furthermore, if researchers choose to administer separate scales to assess global and facet-level satisfaction, important consideration must be given to the order in which these scales are administered. Research on question-order effects has demonstrated that when participants were asked to provide domain-specific

ratings before general ratings responses were highly correlated (r = .55), but that this correlation decreased dramatically (r = .16) when respondents provided general ratings first and specific ratings second (Strack, Martin, & Schwarz, 1988).

Strack et al. argued that conversational norms would suggest that participants would avoid presenting redundant information to the researcher based on what was already learned from previous responses. As such, specific questions that follow a general rating allow participants to provide new information and give context to their general ratings. In contrast, the inverse question order leads to assimilation, defined as "…a consequence of the information priming [where] the answer to the general question becomes more similar to the answer to the previous specific question" (Strack et al., 1988, p. 438). This hypothesis is formally referred to as the given-new contract and has been demonstrated across a range of topics (Jelley & Goffin, 2001; Schwarz, Strack, & Mai, 1991). Consequently, researchers assessing both global and facet-level job satisfaction may wish to administer global scales first in order to minimize assimilation effects.

4.2 Single- versus Multi-Item Assessment

It is generally considered common practice for self-report assessments of psychological constructs to be measured with multi-item inventories. However, Sackett and Larson (1990) argued that single-item measures may be appropriate under certain conditions, specifically when the construct is narrow and relatively unambiguous to the respondent. Job satisfaction seems to fall somewhere between these two poles. Despite evidence that job satisfaction is a multifaceted construct, there is a long history of measuring it with single-item inventories (Kunin, 1955). This has led researchers to question which method of assessment is superior (Wanous, Reichers, & Hudy, 1997). Is it

the case that single-item measures provide us with all we need to know about job satisfaction? Or, is it necessary that we include additional items in order to fully understand the construct?

Wanous et al. (1997) conducted a meta-analysis of single-item measures of overall job satisfaction to determine their convergence with multi-item assessments of global satisfaction. These researchers reported an average corrected correlation of .67 between single- and multi-item tests. This would seem to suggest that single-item measures of overall satisfaction may be adequate. However, Wanous et al. cautioned that this finding should not be interpreted to mean that multi-item measures are unnecessary. In fact, they noted that well-constructed multi-item scales were preferable when the research circumstances allowed for them because they offered added psychometric validity (i.e., internal consistency reliability). Wanous et al. stated that when limitations such as time or cost prohibit the use of multi-item scales, single-item assessments offer an acceptable alternative and should not be considered "fatal flaws in the review process" (p.251).

The meta-analysis by Wanous et al. (1997) focused exclusively on global job satisfaction. Significantly less research has been conducted on the single- versus multi-item assessment of facet-level satisfaction. One such study was conducted by Nagy (2002) who examined the correlation between employees' JDI scores and their response to single-item facet measures of each of the JDI subscales. Similar to the results presented by Wanous et al., Nagy reported correlations ranging from .60 to .72 between the single- and multi-item assessments. However, before we can be confident in these

facet-level relations, it is necessary to replicate these results across different measures of satisfaction.

4.3 Dimensionality of Job Satisfaction

Over the years, several analytic techniques have been used to examine the dimensionality of job satisfaction. Many researchers have relied on exploratory methods such as scree plots and principal axis factoring with varimax rotation to find support for distinct facets of satisfaction (Dunham, 1976; Gregson, 1987; Hancer & George, 2004; Schumm, Gade, & Bell, 2003; Smith, Smith, & Rollo, 1974; Tan & Hawkins, 2000; Yeager, 1981). The results of these investigations were varied, with researchers finding support for five-, seven-, and nine-factor solutions across a single measure of job satisfaction (Gregson, 1987; Smith et al., 1974; Yeager, 1981). More troubling was the prevalent use of orthogonal rotations across these studies. As discussed previously, the dimensions of job satisfaction are theoretically and empirically known to be related to one another. Examining the dimensionality of a construct with theoretically related factors using techniques that assume orthogonality is problematic.

In recent years, researchers have begun to employ confirmatory techniques in the study of job satisfaction. In these instances, researchers have used confirmatory factor analysis (CFA) to compare unidimensional models against those which specify specific factors of satisfaction. In all cases, factor-specific models have been found to fit the data better than single-factor models, thereby supporting the multidimensional nature of job satisfaction (Bowling, Wagner, & Beehr, 2018; Heritage, Pollock, & Roberts, 2015; McIntyre & McIntyre, 2010). However, these models all suffer the same theoretical limitation as their exploratory predecessors since CFA assumes that the loading of an item on all latent factors other than its own is zero (Marsh, Morin, Parker, & Kaur, 2014).

This assumption is particularly unrealistic in the case of multidimensional constructs (Espinoza, Meyer, Anderson, Vaters, & Politis, 2018), such as job satisfaction.

The constraint of null cross-loadings of items across facets of job satisfaction is likely to result in poor-fitting models. The relation between facets of job satisfaction must be accounted for somewhere in the model, and this often becomes reflected in extremely high correlations between latent variables (Asparouhov & Muthen, 2009). To date, researchers have remedied these high latent variable correlations among facets of job satisfaction through the use of hierarchical models, which specify a superordinate general factor of satisfaction (Bowling et al., 2018; Heritage et al., 2015; McIntyre & McIntyre, 2010).

Although such hierarchical models have been found to improve model fit, their use has been adopted without much discussion of their theoretical implications on the study of job satisfaction. As discussed by Markon (2019), hierarchical models in which manifest variables load onto subordinate latent factors, which in turn specify a superordinate factor, make the theoretical assumption that the superordinate factor (i.e., general job satisfaction) is the reason why the subordinate factors (i.e., facets of job satisfaction) are correlated with one another. In addition, these models imply that the loading of all latent variables onto the superordinate factor are proportional equivalent to one another (Espinoza et al., 2018). Furthermore, under this paradigm, relations between the construct (e.g., job satisfaction) and other phenomena (e.g., CWB) are thought to be subsumed by the superordinate factor. That is to say, subordinate factors are not expected to explain any additional variance in relevant outcomes beyond that explained by the superordinate factor (Markon).

Seemingly missing from the job satisfaction literature is a discussion of whether facets of job satisfaction uniquely contribute to various correlates and outcomes beyond general job satisfaction. Such a conceptualization of job satisfaction would best be represented by a bifactor model. Bifactor models are a type of hierarchical model in which a general factor is defined by all items on a scale, and then specific factors are estimated (Markon, 2019). Importantly, specific factors are specified to be uncorrelated with the general factor and with each other. In this way, all shared variance is modelled through item-loadings on the general factor, and each specific factor becomes a residualized factor of satisfaction.

Importantly, hierarchical and bifactor models are not the only statistical techniques that can be used to account for shared variance across factors of job satisfaction. The relatively new analytic technique, exploratory structural equation modeling (ESEM), is a model-based technique in which factors can be defined a priori, as they are in CFA, but where the cross-loading of items onto non-keyed factors can be estimated, as they are in exploratory factor analysis (EFA) (Asparouhov & Muthen, 2009; Marsh et al., 2014). However, within the model these cross-loadings are specified to be as close to zero as possible through the use of target rotation (Espinoza et al., 2018). In addition, ESEM techniques allow for the comparison of models with specific and global factors, through the specification of bifactor ESEM models.

It is clear that although some empirical evidence has been found to support the multidimensional nature of job satisfaction, these investigations have largely relied on analytic techniques that are problematic based on our theoretical understanding of the construct. The application and comparison of more advanced analytic procedures such as

bifactor and ESEM models seems necessary to further our understanding of the dimensionality of job satisfaction.

4.4 Common Measures of Job Satisfaction

Based on the research reviewed here, it is evident that no one assessment of job satisfaction will be appropriate across all contexts. The measure a researcher or practitioner decides to use should depend on the theory being tested, the level of specificity required, and the resources available to conduct the investigation. In addition, before it is possible to claim that current assessments do not adequately capture the facets of job satisfaction that are important to leaders, it is necessary to have a thorough understanding of the current measures. Only then is it possible to build on the framework to develop a new measure of job satisfaction targeted towards leaders.

4.4.1 Job Descriptive Index

The JDI is often considered to be the most widely used assessment of job satisfaction (Spector, 1997). It is a multi-item, facet-level assessment that was developed by Smith et al. (1969). It measures five facets of satisfaction: work, pay, promotion, supervision, and coworkers. The scale consists of 72 items which require respondents to indicate whether various evaluative adjectives are descriptive of their jobs. Participants are also given a brief definition of each facet to help give context to the adjectives. Spector (1997) gives an example for the work facet of the JDI: “Think of the work you do at present. How well does each of the following words or phrases describe your work? Routine; Satisfying; Good”. Responses are scores as either yes, no, or cannot decide.

A meta-analysis examining the construct validity of the JDI (Kinicki, McKee-Ryan, Schriesheim, & Carson, 2002) offered substantial empirical support for its use. In particular, researchers demonstrated acceptable levels of both internal consistency and

test-retest reliability. They also demonstrated several hypothesized relations with various correlates, antecedents, and consequences of job satisfaction such as job characteristics, leader relations, motivation, withdrawal and citizenship behaviours, and job performance. However, the authors noted that the JDI may not be the absolute best measure of job satisfaction, particularly when the research question calls for an overall measure of satisfaction. Kinicki et al. discussed the merits of alternative measures, in particular the MSQ, which assesses a broader range of facets and may actually be a superior measure of pay, promotion, co-worker, and supervision satisfaction due to the fact that the JDI demonstrated a relatively high level of method and error variance in the assessment of these facets.

4.4.2 Minnesota Satisfaction Questionnaire

The MSQ is perhaps the next most popular facet-level assessment of job satisfaction. Developed in 1967 by Weiss and colleagues, the MSQ is a comprehensive assessment that measures 20 different facets of satisfaction. At 100 items, the MSQ is perhaps the longest assessment of job satisfaction, limiting the ability for researchers and practitioners to utilize the measure under tight time constraints. As such, a 20-item shortened version was also released which assesses each of the 20 facets with only one item. For both the long and short forms of the MSQ, participants are asked to consider how satisfied they are with various aspects of their jobs. Each statement starts with the stem “On my present job, this is how I feel about…” and example items include “The chance to be of service to others” and “The variety of my work” (Weiss et al., 1967). Responses are given on a five-point Likert scale from very dissatisfied to very satisfied.

Despite demonstrating adequate psychometric properties (Weiss et al., 1967), the MSQ has been criticized for its exhaustive list of subscales. Although the MSQ assesses

more facets than any other job satisfaction measure, it has been argued that some of the facets (i.e., supervision-human relations and supervision-technical) are so highly correlated they may be indistinguishable from one another (Spector, 1997). As such, the MSQ may be unnecessarily long and therefore not ideal for time-restrictive test settings.

Researchers have factor-analyzed items on the MSQ using principal components analysis and found conflicting evidence of three or four factors underlying the 20 facets (Hancer & George, 2004; Tan & Hawkins, 2000). Although both groups of researchers found evidence of intrinsic and extrinsic factors of satisfaction, Hancer and George defined a third, general factor consisting of satisfaction with coworkers and working conditions, whereas Tan and Hawkins noted two additional factors – nature of work and personal autonomy.

4.4.3 Job Satisfaction Survey

Unlike the JDI which is a copyrighted assessment that requires permission and the payment of administration fees, the JSS is a publicly available measure developed by Spector (1985a). It assesses nine facets of satisfaction: pay, promotion, supervision, fringe benefits, contingent rewards, operative conditions, coworkers, nature of work, and communication. At 36 items, the JSS is relatively short for a multi-item measure. Example items include “I like the people I work with” and “My supervisor is quite competent in doing his/her job”. Responses are provided on a six-point Likert scale, ranging from disagree very much to agree very much. In addition to measuring nine facets, Spector (1985a) stated that scores could be aggregated across facets to assess overall satisfaction. However, given the previous discussion regarding composite facet scores of global satisfaction, this procedure may not be appropriate.

The JSS has been found to demonstrate adequate levels of internal consistency (α = .60 to .91) and test-retest reliability (*r* = .37 to .74 over an 18 month time period; Spector, 1997). In addition, each of the JSS facets were found to correlate quite highly with the JDI facets (*r* = .61 to .80) suggesting that it may be a more affordable alternative for researchers (Spector, 1997). However, both the JDI and JSS require participants to report on their agreement of whether certain characteristics are present in their current job. They do not explicitly ask whether these characteristics contribute to their satisfaction on the job. As such, these types of measures ignore the importance each individual ascribes to the various characteristics of their job. For this reason, it could be argued that measures which use a satisfaction-based response scale, such as the MSQ, provide a more direct measure of satisfaction.

4.4.4 Job Diagnostic Survey

The Job Diagnostic Survey (JDS) is a comprehensive workplace assessment based on the JCM (Hackman & Oldham, 1975). The JDS was developed to assess specific job characteristics, psychological states, and affective reactions to one's job. These affective reactions include both general and specific measures of job satisfaction. Measured facets of job satisfaction include: growth, pay, security, social, and supervision. All facets are assessed with two to five items each and responses are provided on a seven-point Likert scale, with higher scores reflecting higher satisfaction. As noted by Hackman and Oldham, the purpose of the JDS is to identify ways in which jobs could be redesigned in an effort to increase satisfaction. As such, the facets are focused around organizational policies and procedures that could be changed. Although this means that the JDS may fill an important need for macro-level research, it does mean that this assessment may miss

important interpersonal facets such as coworker relationships, making it potentially inappropriate for use at the individual-level.

4.4.5 Global Job Satisfaction Measures

Although there are numerous single-item measures of global job satisfaction it is difficult to assess the reliability and validity of these measures because they are often developed and used in only one study (O'Connor, Peters, & Gordon, 1978). Some more widely used measures of global satisfaction include the Job in General Scale (JIG) (Ironson et al., 1989) and the Michigan Organizational Assessment Questionnaire Job Satisfaction Subscale (MOAQ) (Cammann, Fichman, Jenkins, & Klesh, 1979 as cited in Spector, 1997). The JIG is an 18-item test with a format that mimics the JDI. Ironson et al. (1989) reported high internal consistency coefficients across several studies (α = .91 to .95) and found that it correlated highly with other global satisfaction measures. Similarly, the MOAQ is a very brief, three item measure that asks participants to report their overall satisfaction using a seven-point Likert scale (*strongly disagree* to *strongly agree*). With only three items the MOAQ achieves impressive levels of internal consistency (α = .77) and seems to be a useful tool for those who are interested in a brief overview of employees' job satisfaction (Spector, 1997).

Chapter 5

5. Job Satisfaction of Workplace Leaders

The previous discussion highlights the many factors that have been examined in the study of job satisfaction. However, with the exception of Scarpello and Campbell (1983) not much has been done to explore the facets of job satisfaction that are studied. Are all the components captured? Are they consistent across levels in an organization? Research shows that the characteristics of one's job, such as complexity, has an influence on the magnitude of satisfaction one experiences, but can they also influence how satisfaction is experienced?

The vast majority of the job satisfaction literature discussed previously does not focus exclusively on the experience of satisfaction among leaders. With respect to measurement in particular, the facet measures reviewed are quite broad and it is unclear if the elements of job satisfaction measured by each of these would best represent the experiences of those who hold leadership positions within an organization.

Although some researchers have investigated job satisfaction among leaders, in many cases the definition of a leader is somewhat unclear. For example, Malinowska-Tabaka (1987) factor analyzed responses to 40 different job satisfaction indicators given by teachers, lawyers, doctors, and engineers. Although it was found that these groups scored high on specific indicators such as intrinsic rewards, prestige, public image, and secure future, it was unclear whether participants actually held leadership positions within their organizations. Furthermore, Malinowska-Tabaka did not ask participants to rate the importance of each facet. Therefore, just because individuals were found to be highly satisfied with these areas of their jobs does not mean that these were the only areas that were important to their satisfaction.

In 1985, a group of researchers noted that “studies based on life cycle and career stage models suggest that determinants of job attitudes change depending on the particular stage of the career.” (Lee & Wilbur, p. 718). This would seem to suggest that job satisfaction may be conceptually different among leaders since leadership roles tend to occur later in an individual’s career. However, it unfortunately seems to be the case that studies of job satisfaction and career stage have focused on age, tenure, and salary (Lee & Wilbur, 1985; Teclaw, Osatuke, Fishman, Moore, & Dyrenforth, 2014). In addition, these studies continue to look at mean differences in satisfaction across participants’ careers; they do not examine if the construct differs as a function of the role they assume within an organization (i.e., leader versus non-leader).

The findings of Scarpello and Campbell (1983) suggest that although job satisfaction theories provide a useful starting point for identifying facets of satisfaction, they may be insufficient in capturing the full range of workers’ experiences. With so many changes to the workplace over the past 35 years; from the type of work we do, to the way we do it, to how our organizations are structured, it seems a worthwhile endeavor to re-examine the facets of job satisfaction that matter most to our workforce. Furthermore, examining these facets among senior leadership seems particularly important given the pervasive impact leaders have on their followers and the success (or derailment) of their organizations.

Although some past researchers have noted the importance of studying job satisfaction among leaders, these examinations have predominately focused on mean differences in satisfaction across participants’ careers rather than examining if the construct differs as a function of one’s role within an organization (Lee & Wilbur, 1985).

The relative exclusion of leaders from the job satisfaction literature is surprising, given the surge in leadership-focused research over the past decade. A PsychINFO search of "(leader*) or (leadership)" revealed over 40 000 journal articles published since 2000, over 19 000 of which were published in the past five years. As the media portrays more and more examples of dysfunctional or corrupt leadership (Karabell, 2015) there seems to be a push within organizations to develop and retain top talent. Consequently, it is important to have a thorough understanding of what factors attract leaders to an organization, as well as what influences their satisfaction once they arrive. Before these questions can be answered it is important that researchers have the proper tools to carry out this research.

The lack of a leader-relevant measure of job satisfaction is problematic for both researchers and practitioners alike. For research purposes, the use of a leader-relevant measure of job satisfaction over traditional generic assessments may lead to improved predictive validity of specific behaviours pertinent to a leadership role. This conclusion follows from the compatibility principle, which states that attitudes best predict behaviours when they are measured at the same level of specificity as one another (Ajzen & Fishbein, 1977). By assessing leaders' satisfaction with specific components of their job, researchers might find stronger associations with corresponding behaviours.

From a practitioner's perspective, a satisfaction assessment that more precisely assesses the experiences of leaders may be helpful at both the organizational and individual level. With respect to the organization, studying factors that contribute to satisfaction (or dissatisfaction) amongst senior leadership can provide clarity around which organizational policies and/or practices are well-received by leadership and which

may be causing stress, frustration, or inefficiencies (i.e., do leaders have the authority to manage their teams as they see fit?). Such investigations may help to provide organizations with a better sense of which factors are most important to consider when trying to retain top-talent. In terms of the impact of a leader-specific satisfaction measure at the individual level, such an assessment might provide practitioners with a richer sense of leaders' experiences on the job. Within the context of an executive coaching session, this added detail could enhance the coach's understanding of the leader's workplace, thereby improving the efficiency of these conversations.

The creation of a measure of job satisfaction that more accurately captures the experiences of workplace leaders has the potential to make an important contribution to the job satisfaction literature. To date, relatively little is known about leaders' job satisfaction and whether the same job characteristics that are associated with satisfaction in non-leaders are also relevant for leaders. Furthermore, the creation of this assessment may allow us to identify whether or not there are job characteristics unique to leaders that have not been accounted for by previous job satisfaction theories, or whether leaders have different needs than non-leaders when it comes to their jobs and what it takes to be satisfied. Knowing what those characteristics or needs may be can allow us to examine their impact on leaders, not only in terms of their performance but also on their followers. As such, having a greater understanding of the structure of satisfaction within leaders has the potential to advance our current understanding and theories of job satisfaction more broadly.

Chapter 6

6. The Present Study

The purpose of this dissertation was to explore the measurement of job satisfaction among workplace leaders. In particular, the goal was to develop a new assessment of leaders' job satisfaction that could be used across a range of organizations and industries. The aim here was not to contribute to the proliferation of non-replicated job satisfaction measures (O'Connor et al., 1978), but rather to create a reliable and valid assessment that has the potential to provide utility to both researchers and practitioners.

It is important to note that one criticism of previous leadership research surrounds the criteria on which samples are defined as leaders (Zaleznick, 2011). This criticism points to a bigger issue within the leadership domain that should be addressed in a systematic manner, which is beyond the scope of the current project. However, in an attempt to develop an assessment that is relevant for this population the current study was careful to use clearly defined inclusion criteria in the recruitment of its leader samples. As described in greater detail in Section 8.1.1 , for the purposes of this dissertation, leaders were defined as those individuals who held formal positions of authority within their respective organizations, working in a management position where they oversaw the performance of at least one direct report.

6.1 Approach to Test Construction

The creation of the Leader Satisfaction Assessment (LSA) was guided by test construction principles outlined by Brod, Tesler, and Christensen (2009), Hinkin (1998), Jackson (1971), Kline (2000), Lane, Raymond, and Haladyna (2016), and Spector (1992). Using an inductive approach and following a similar methodology to Scarpello and Campbell (1983), a series of qualitative interviews and open-ended survey questionnaires

were conducted with senior leaders across a variety of organizations to examine which factors contributed to satisfaction in their roles. Since popular facet-level measures of satisfaction largely assess job characteristics and work experiences of mid- to lower-level employees, the following hypothesis was made:

H1: Leaders will identify aspects of their job as being important to their satisfaction that are currently not adequately captured by popular satisfaction measures (i.e., facets or categories not identified a priori in the interview coding guide; see Appendix A).

Responses were content-analyzed and definitions were written for each facet of job satisfaction identified by leaders, as well as those in the interview coding guide (see Appendix A). Based on these definitions an item pool was created to assess each facet of satisfaction. This item pool was subjected to rigorous psychometric refinement and several subject matter expert (SME) reviews. Once the item pool had been reduced, concurrent validity was evaluated by examining the relation between the LSA and poplar measures of job satisfaction. Given the high degree of content overlap in the measurement of global satisfaction, these scales were expected to correlate highly with one another.

H2: The global scale of the LSA will be strongly positively correlated with other global measures of job satisfaction.

Since previous research has found relatively high correlations between facets of job satisfaction (Scarpello & Campbell, 1983), significant correlations between LSA facets of satisfaction and facets of other satisfaction measures were expected. The magnitude of these correlations was expected to be stronger for those LSA facets that had

been identified a priori in the interview coding guide, whereas facets not identified a priori were expected to display relatively smaller, though statistically significant, correlations.

H3a: Facets of the LSA that were identified a priori in the interview coding guide will be strongly positively correlated with popular facets of job satisfaction.

H3b: Facets of the LSA that were not identified a priori in the interview coding guide will be moderately to weakly positively correlated with popular facets of job satisfaction.

For all hypotheses throughout this dissertation, the interpretation for strength of associations was defined in accordance with Cohen and Cohen's (1975) guidelines, with small effects corresponding to correlations between |.10| to |.29|, medium effects corresponding to correlations between |.30| to |.49|, and large effects corresponding to correlations greater than |.50|.

To examine evidence of discriminant validity, relations between the LSA and impression management, as assessed with the Bidimensional Impression Management Inventory (BIMI), were planned (Blasberg, Rogers, & Paulhus, 2013). The BIMI assesses two forms of impression management: agentic (exaggerating one's intellect) and communal (denial of engagement in socially deviant behaviours). It was anticipated that these relations would be relatively small.

H4: Facets and global scores of the LSA will be weakly correlated with both agentic and communal subscales of the BIMI.

The final step in the validation process was to situate the LSA within our existing knowledge of the nomological network surrounding job satisfaction. In accordance with

the review of above, several predictions were made, with hypotheses summarized in Table 3.

Although largely absent from the job satisfaction literature, the HEXACO model of personality (Lee & Ashton, 2004) is often considered a more comprehensive assessment of personality than the FFM due to the addition of the Honesty-Humility trait (Ashton & Lee, 2005; 2008). Honesty-Humility has been found to impact a variety of workplace behaviours, with evidence suggesting it is a better predictor of deviant behaviour than any other personality trait (Lee, Ashton, & Shin, 2005; O'Neill, Lewis, & Carswell, 2011). In addition, previous research has not comprehensively studied the extent to which facets of job satisfaction relate to the HEXACO traits. As such, in addition to testing Hypotheses 5 and 6, this dissertation sought to extend our knowledge of dispositional correlations of job satisfaction by examining relations with Honesty-Humility. To do so, the following research questions were posed:

RQ1: (a) To what extent is Honesty-Humility correlated with job satisfaction? (b) Does it incrementally add predictive validity over other personality traits?

RQ2: Are facets of job satisfaction differentially related to each of the HEXACO traits?

Core self-evaluations have also been established as important dispositional sources of job satisfaction (Judge & Bono, 2001). Based on previous research, Hypotheses 7 and 8 were made. As with the HEXACO, investigations between facet-level satisfaction and core self-evaluations have been relatively rare. As such, a similar research question was posed here:

RQ3: Are facets of job satisfaction differentially related to each of the core self-evaluations traits?

Exploring the relation between job satisfaction and both cognitive and emotional intelligence, once again the replication of existing patterns of results were expected, as detailed in Hypothesis 9. Extending our knowledge of the relation between job satisfaction and intelligence, an examination of the relation between facets of satisfaction and intelligence may reveal differential results. For example, the gravitation model would suggest that those with high cognitive ability may be more satisfied with task-based facets of satisfaction (e.g., promotions, compensation) whereas emotional intelligence may display stronger relations with interpersonal facets of satisfaction (e.g., coworkers, mentorship, service).

RQ4: (a) Are task-based (rather than interpersonal-based) facets of satisfaction more highly correlated with cognitive ability and (b) are interpersonal-based (rather than task-based) facets of satisfaction more highly correlated with emotional intelligence?

As discussed in Section 3.3, job satisfaction has been found to have weak to moderate relations with traditional measures of task performance. However, effects seem to be stronger for more attitudinally-determined dimensions of performance such as contextual performance and CWBs. Social Exchange Theory (Thibaut & Kelley, 1959) and reciprocity norms (Gouldner, 1960) have been offered as one mechanism by which to explain these relations. These theories suggest that pro-social and deviant behaviours may occur in response to the degree to which an employee experiences satisfying or dissatisfying conditions at work, respectively. As such, Hypothesis 10 was made. In

addition, emotional intelligence has been shown to influence how these workplace events are experienced, which led to the inclusion of the following research questions:

RQ5: Is satisfaction with specific facets of one's job more highly correlated with OCBs/CWBs directed toward a similar target? For example, will satisfaction with coworkers be more strongly associated with OCBs/CWBs directed toward individuals, rather than the organization? Will satisfaction with company policies be more strongly associated with OCBs/CWBs directed toward the organization, rather than individuals?

RQ6: Does emotional intelligence moderate the relation between job satisfaction and (a) OCBs or (b) CWBs?

Last, this dissertation will also examine the relation between the LSA, commitment, and turnover intentions (see Hypotheses 11 and 12). Given the level at which commitment and turnover are measured, differential correlations with facets of satisfaction were not expected and so no additional research questions were made.

Table 3

Summary of Hypotheses Made in the Validation of the LSA

Domain	Hypothesis
Individual Differences	
H5	(a) Neuroticism will be at least moderately negatively correlated with global job satisfaction, whereas (b) Extraversion and (c) Conscientiousness will each be at least moderately positively correlated with global satisfaction.
H6	Agreeableness will be weakly positively correlated with global satisfaction.
H7	(a) Self-esteem and (b) an internal locus of control will each be at least moderately positively correlated with global job satisfaction.
H8	Generalized self-efficacy will be at least moderately to highly positively correlated with global job satisfaction.
Cognitive Ability and EI	
H9	Global job satisfaction will be (a) weakly positively correlated with general mental ability, and (b) at least moderately positively correlated with emotional intelligence, (c) with stronger relations observed for trait than ability-based measures of EI.
Performance	
H10	(a) Global job satisfaction will be at least moderately positively correlated with OCBs and (b) at least moderately negatively correlated with CWBs. (c) The magnitude of the relation is expected to be stronger with CWBs than with OCBs.
Commitment and Turnover	
H11	(a) Global job satisfaction will be positively correlated with both affective and normative commitment, (b) with affective commitment showing a stronger effect.
H12	Global job satisfaction will be moderately negatively correlated with turnover intentions.

Chapter 7

7. Study 1: A Qualitative Investigation of Leaders' Job Satisfaction

To create a leader-specific measure of job satisfaction it was first necessary to identify which facets of satisfaction were of particular importance to leaders in the workplace. As such, a pilot study was conducted in which semi-structured interviews were performed with leaders from various organizations. The purpose of this pilot study was to test and refine interview questions, and to examine preliminary evidence of leader-relevant facets of satisfaction. As described in detail below, transcripts from these interviews were subjected to content-analysis in order to identify emergent themes relevant to the satisfaction and dissatisfaction of leaders. These themes were then used to inform the development of an item pool of leader-specific job satisfaction. Since previous facet-level measures of satisfaction largely assess job characteristics and work experiences of mid- to lower-level employees, it was expected that leaders would identify some parts of their job as being important to their satisfaction that are not currently assessed by popular facet-level measures of job satisfaction.

7.1 Participants

A convenience sample of five corporate leaders was recruited from the executive coaching client list of a private consulting company. Although this sample meant that multiple perspectives could be considered in the identification of leader-relevant facets of satisfaction, the number of participants fell short of the recommendations of Brod et al. (2009). As such, to ensure that content saturation was reached in the identification of job satisfaction facets, interview questions were modified and administered in the form of open-ended survey questions to participants in Study 2, Survey Sample 1.

All leaders were employed in the uppermost level of management within their respective organizations. Examples of common job titles included Senior Directors and Vice Presidents. These individuals were considered to be employed in a leadership role since their positions required them to grow, develop, and motivate their followers to achieve success for both the organization and their own careers. Collecting responses from a group of senior leaders such as these was beneficial to the development of the LSA because of the unique perspectives they were able to offer. It is plausible that those in such senior positions were likely to have had work experiences across a variety of organizations and levels of leadership. As such, senior leaders may have a greater breadth of experiences to draw from than those in a more junior position. Breadth of content coverage was important in the development of the initial LSA item pool. However, to be sure that the experiences of more junior leaders were not overlooked, open-ended survey questions were administered in Study 2, Survey Sample 1, to leaders across all levels of management (i.e., lower, middle, and upper).

7.2 Measures

The semi-structured interview questions that were asked of each leader can be found in Appendix B. These questions were adapted from those used by Scarpello and Campbell (1983), in their investigation of facets of job satisfaction that were not captured by existing measures.

7.3 Procedure

As indicated previously, all participants were recruited from an executive coaching client list. Individuals underwent their scheduled executive coaching sessions, which were conducted either in-person or over-the-phone. Following their regular session, each potential participant was asked if they were interested in taking part in a 20-

minute survey of job satisfaction. If an individual verbally consented to participate, the executive coach immediately conducted the semi-structured interview, asking each of the questions listed in Appendix B, in the order they appear. Responses were transcribed by the executive coach for later analysis. All interviews were conducted by the same senior executive coach who held a Ph.D. in I/O psychology and had over 15 years of executive coaching experience at the time the interviews took place.

7.4 Analytic Plan and Results

The content analysis procedures for the interview transcripts are outlined below. This procedure was based largely on the recommendations of Brod et al. (2009). The purpose of this analysis was to identify facets of job satisfaction that were important to leaders. As such, the content analysis followed an inductive approach, attempting to recognize patterns and themes present in leaders' responses.

7.4.1 Creation of the Interview Coding Guide

An interview coding guide was created prior to data collection based on a thorough review of the literature (see Appendix A). A priori categories were identified based on the facets of satisfaction measured by the JDI, MSQ, and JSS. In some instances, facets were merged if they had been found to be highly correlated with one another in the literature, or were conceptually representative of the same construct (e.g., Recognition and Status). A priori subdomain content was generated by selecting prototypical statements reflective of specific item content for each facet across the JDI, MSQ, and JSS. Efforts were made to include both positive and negative examples of each category. As evidenced from the included categories, the interview coding guide used an integrative approach in the identification of facet satisfaction, as facets reflecting both

need fulfillment (e.g., Achievement and Recognition) and job design theories (Autonomy and Variety) were included.

7.4.2 Interview Transcriptions

First, each interview was documented by the interviewer. Brod et al. (2009) recommended that all interviews be transcribed verbatim. Although every effort was taken to ensure accuracy in recording, verbatim transcriptions were not obtained for two reasons. First, the interviewer was not given permission to audio record the sessions due to the highly confidential nature of the coaching engagements. Second, and related, confidentiality constraints meant that it was not possible to have a researcher sit-in on the sessions to take notes. As such, verbatim transcriptions were sacrificed for confidentiality, rapport, and conversational flow between the interviewer and the participant. The interviewer took detailed notes during each session. In addition, immediately following each session the interviewer took time to reflect on the session, enriching the notes wherever possible.

7.4.3 Data Coding

The second step was to code the data obtained from the interviews. As recommended by Brod et al. (2009), the initial coding of all interviews was conducted by someone other than the interviewer. This independent coder was a Ph.D. Candidate enrolled in an I/O psychology program. The coder analyzed the data one interview at a time.

To analyze each interview, the coder first compiled a list of all points recorded by the interviewer. Then, these statements were sorted into subdomains, where each subdomain reflected a single example or instance. These subdomains formed the basis of specific item content for the final measure. Once all subdomains were identified they

were sorted according to the subdomains identified in the interview coding guide (see Appendix A). A new subdomain level was created for any statement that could not be classified into one of these predetermined labels. Subdomains and accompanying statements that were coded can be found in the data emergent column of the interview coding guide.

Four new categories (facets) were identified: Transparency, Mentorship, Strategic Planning, and Team Development. In addition, modifications were made to the a priori categories to accommodate the 18 new subdomains that were identified by leaders. Modifications were also made to add important distinctions between facets. For example, Independence was an a priori facet that included items related to working alone and autonomy. However, working alone and having autonomy are not necessarily the same thing as the latter can also refer to having power to make decisions for oneself. This sense of power to make decisions overlaps with the Authority and Responsibility facets. Although previous research has distinguished Responsibility as having power over one's own work and Authority as having power over others (Weiss et al., 1967), the results of the qualitative interviews suggested that this distinction may be moot for leaders. To simplify these distinctions, the facet Solitude was created to refer to satisfaction working away from others, while Authority was defined as satisfaction with the latitude one has to make decisions at work.

7.4.4 Facet Definitions

For each facet, an extensive list of job satisfaction assessments that included the facet was compiled. All definitions and item content pertaining to that facet were reviewed and relevant subdomains identified as part of the semi-structured interviews were noted. Predominant themes were then summarized with two to five key elements.

Definitions were written to include each of these key elements while also being careful to note what made the facet distinct from similar but different facets. Care was taken to select facet labels that were clear and descript. For example, as noted above, the label Independence could refer to satisfaction working alone or satisfaction with the degree to which one has the power to make decisions by themselves. As such, the label Solitude was used to refer to the former construct whereas the label Authority referred to the latter. A complete list of facet labels and definitions can be found in Appendix C.

7.4.5 Item Generation

Items were generated by the coder for each facet of the LSA. Item development followed the recommendations of Hinkin (1998), Lane et al. (2016), and Spector (1992). That is to say, special attention was given to developing an item pool that consisted of items that: were simple and easy to understand, used language familiar to the target audience, avoided "double-barreled" statements, and avoided leading respondents to answer questions in a specific manner. In addition, items were written such that it could reasonably be expected that respondents would endorse them differently, thereby avoiding items that generated little variance in responses.

The size of the initial item pool was guided by Hinkin (1998), who suggested that most homogeneous constructs in the I/O domain could adequately be assessed with four to six items. Hinkin also noted that researchers could expect to drop nearly half of developed items from final scale versions due to poor psychometric properties. This would suggest that the initial item pool should consist of a minimum of 12 items per facet of satisfaction. An initial item pool of 224 items was created. These items were reviewed by two independent SMEs who each had substantial prior experience with item writing, test development, and I/O psychology. Feedback from these two SMEs was reviewed by

the coder, item refinements were made, and the initial item pool was modified to 240 items, with each facet being measured by 12 items.

The newly developed satisfaction measure, the LSA, used a satisfaction-based rating scale, as described in Section 4.4.3. When determining the optimal number of response option categories to include in self-report assessments, researchers have found evidence that five-to-seven points tend to be ideal (Preston & Colman, 2000). As such, a five-point rating scale was selected for the LSA.

Early research using the MSQ was consulted to inform the selection of scale point anchors for the LSA. The first version of the MSQ used a five-point rating scale, where anchors were equally distanced around a neutral midpoint. However, researchers consistently observed a negatively skewed distribution to the data, suggesting a strong ceiling effect. As such, the anchors were modified such that there were more positive response options than negative, which resulted in a non-neutral midpoint of the scale. This was found to reduce the skewness of the data (Minnesota Satisfaction Questionnaire, 2016). As such, these positively-focused anchors were also selected for use in the LSA, with the following anchors for each scale point: 1 = not satisfied, 2 = only slightly satisfied, 3 = satisfied, 4 = very satisfied, 5 = extremely satisfied. The LSA also offered a sixth response option, not applicable, which respondents could use to indicate that the item was not relevant to their role.

Chapter 8

8. Study 2: Development of the Leader Satisfaction Assessment

There were four main purposes of Study 2. First, it was important to determine if content saturation had been reached in the Chapter 7 interviews by administering these questions to an independent sample of leaders (Survey Sample 1). If there were any facets of leader job satisfaction identified in this second group of leaders that were not captured by the initial LSA item pool, additional items were written for subsequent testing in Survey Sample 2. The second purpose of Study 2 was to examine the psychometric properties of the initial LSA item pool. This was done by administering the initial item pool created in Section 7.4.5 to Survey Sample 1. Data collected from these leaders were subjected to rigorous psychometric testing to reduce the number of items per facet from 12 to six (see Section 8.2.4.1).

The third purpose of this study was to examine the dimensionality of the LSA. As discussed in Section 4.3, previous investigations of the dimensionality of job satisfaction have predominately relied on exploratory techniques. As such, an important contribution of the present study was the use of confirmatory methods that more closely aligned with theoretical conceptualizations of job satisfaction. Because this novel approach meant that that the factor structure of the LSA could not be compared to previous findings in the literature, the dimensionality of a popular measure of job satisfaction – the MSQ – was assessed using the same procedures applied to the LSA. Analyses of dimensionality were conducted in both Survey Samples 1 and 2 so that the factor structure could be assessed for replicability.

The MSQ was chosen for this purpose because it shared a number of properties with the LSA. Arguably most importantly, both the MSQ and LSA measure a large

number of facets of satisfaction at a similar level of specificity. In addition, the two assessments consist of statements for which individuals are asked to rate their level of satisfaction using a five-point scale with a non-neutral midpoint. As such, individuals completing both assessments are provided with similar instruction sets and are asked to provide responses that result in similar types of information.

Last, the fourth purpose of this study was to examine evidence of concurrent validity. As defined by Murphy and Davidshofer (2001), concurrent validity stipulates that a measure should be correlated with other measures that it is theoretically related to. In the case of the LSA, correlations were examined with two popular measures of job satisfaction, the MSQ and MOAQ, to examine evidence of concurrent validity of both general job satisfaction and facets of satisfaction.

8.1 Survey Sample 1

8.1.1 Participants

Participants were recruited from Amazon's Mechanical Turk (MTurk). A posting was added to the site which stated that participants were needed for research in job satisfaction. To be eligible to participate in the study, participants were told they must currently be employed in a formal leadership role, which was defined as (1) a management position (2) that required them to oversee the performance of others and (3) where they were responsible for developing the abilities and career progress of their followers.

Responses were collected from N = 255 leaders. A total of N = 202 leaders provided responses to the open-ended survey questions. Responses to questions about work experience were reviewed to confirm eligibility. Only leaders who reported two or more years of experience in a leadership role, as defined previously, and who indicated

having at least one direct report were retained in the final sample. Additional cases were removed from further analyses if duplicate IDs were presented, there were no responses provided to questions beyond the demographic questions, or participants failed to respond as instructed to any of the directed response items. This resulted in a final sample size of $N = 196$ for all remaining measures.

Demographic details for the sample are presented in Table 4. The sample was predominately male, aged 22 to 76 years ($M = 33.43$, $SD = 9.56$). The sample was relatively well educated, and on average leaders indicated having 10.02 direct reports.

Table 4

Demographic Percentages for Survey Sample 1

	% of Sample (*N* = 196)
Gender	
Male	68.9
Female	30.6
Non-binary	0.5
Education	
High school/GED	6.1
Some college	7.1
2 year college diploma	7.1
3-4 year university degree	53.1
Master's degree	25.0
Doctoral degree	0.5
Professional degree (JD, MD)	1.0
Management Level	
Lower	15.8
Middle	66.3
Upper	17.9
Job Title	
Accountant	2.0
Administrator	3.1
Consultant	0.5
Coordinator	1.5
Department Head	2.6
Director	2.0
Engineer	0.5
Executive	1.0
Manager	50.0
Nurse	1.0
Owner	0.5
Supervisor	11.7
Teacher	1.0
Team Leader	5.6
Vice President	0.5
Other	16.3

Table 4 (continued)

Demographic Percentages in Survey Sample 1

	% of Sample (*N* = 196)
Industry	
Art/Design	0.5
Automotive	0.5
Business, Finance, Administration	57.7
Distribution	0.5
Entertainment	1.0
Food Service	0.5
Health Care	5.2
Hospitality	1.0
Landscaping	0.5
Manufacturing	4.6
Natural and Applied Science	3.6
Natural Resource/Pipeline	0.5
Not-for-profit	0.5
Professional Services/Advertising	1.0
Publishing	0.5
Retail/Wholesale	3.1
Sales	1.0
Social Science, Education, Government Service and Religion	11.3
Software, Telecom, Technology	5.2
Other	1.0
Size of Organization (# of employees)	
1 – 49	19.1
50 – 999	53.1
1 000 – 4 999	17.0
5 000+	10.8

8.1.2 Measures

8.1.2.1 Open-Ended Survey Questions

Modified versions of the interview questions used in Chapter 7 were administered to leaders in an open-ended survey that was delivered online. Questions were presented one at a time, with a blank text box where participants could write their responses. Question 4 was modified in this administration, such that leaders were asked to rate the importance of each facet defined in Appendix C. This question was presented in a matrix format and asked participants to rate the importance of each facet to their own job satisfaction, on a scale from 1 (not at all important) to 5 (extremely important).

8.1.2.2 Job Satisfaction

First, leaders were asked to indicate their overall level of satisfaction with their current job, in general, using a five-point scale (1 = not satisfied, 2 = only slightly satisfied, 3 = satisfied, 4 = very satisfied, 5 = extremely satisfied). This global assessment of satisfaction was collected before the assessment of facet-specific satisfaction so as to reduce assimilation effects (Schwarz et al., 1991). After providing this global assessment, leaders rated their level of satisfaction with each of the 240 items in the LSA item pool using the same five-point positive rating scale.

The MSQ (Weiss et al., 1967) and the job satisfaction subscale of the MOAQ (Cammann et al., 1979) were also administered. The MSQ is a 100-item measure of job satisfaction that assesses 20 facets of satisfaction: ability utilization, achievement, activity, advancement, authority, company policies and practices, compensation, coworkers, creativity, independence, moral values, recognition, responsibility, security, social service, social status, supervision (human relations), supervision (technical), variety, and working conditions. Example items include “The chance to work by myself”

(independence) and “The opportunities for advancement on this job” (advancement). Responses are provided on a five-point Likert-type scale, ranging from not satisfied to extremely satisfied. Previous researchers have found the MSQ to demonstrate adequate levels of internal consistency (α = .59 to .97, median α = .93) and test-retest reliability over a one week and one year period (r =.66 to .90 and r = .35 to .71, respectively).

The job satisfaction subscale of the MOAQ is a brief, three-item measure of global job satisfaction. It asks participants to report their overall satisfaction using a seven-point Likert-type scale (1 = *strongly disagree*; 7 = *strongly agree*). With only three items, the job satisfaction subscale of the MOAQ achieves impressive levels of internal consistency (α = .77), making it a useful scale for measuring individuals’ overall level of satisfaction.

8.1.2.3 Careless Response Checks

Several researchers have identified careless or inattentive responding as a serious concern for survey research, especially when data are collected online in an anonymous manner, as it is with MTurk (Meade & Craig, 2012). As such, several careless response checks were integrated into the administration of the materials.

Following the recommendations of Meade and Craig (2012), three directed response items were embedded within the measures. These items asked participants to provide specific responses to a particular item to ensure they were responding attentively. An example item is, “For quality control purposes, please respond strongly agree to this item.” One directed response item was randomly embedded within the first third of the questions, the second within the next third, and the last within the final third section of questions.

8.1.3 Procedure

A recruitment advertisement for this study was posted on MTurk's website. Individuals who expressed an interest in participating were provided with a URL that directed them to the study materials hosted on Qualtrics. They were first asked if they felt they held a formal leadership position at work. Those who did not were redirected to the study termination page and were notified that they were ineligible to participant in the study. Individuals who indicated they held a formal leadership position at work were eligible to participate and were allowed to continue on and completed all the measures. Upon completion of the study, participants received a HIT code which they were asked to enter into the original MTurk study page in order to be compensated for their participation. Once the correct HIT code had been successfully entered by participants, they received a $2.00 credit to their MTurk accounts. The study took approximately 30 minutes to complete.

8.1.4 Analytic Plan

8.1.4.1 Open-Ended Survey Questions

Open-ended survey questions that were analogous to the pilot study interview questions were administered to determine if content saturation had been reached in Study 1 interviews. The decision of whether or not saturation has been reached is a relatively subjective judgment; however Brod et al. (2009) recommended that if novel information was uncovered in the final interview, then additional data should be collected until this is no longer the case. Responses to the interview questions were analyzed in the order in which the data were collected so it was possible to identify the point at which no novel information was received. This was found to occur after the 129th respondent.

The procedure for analyzing open-ended response data mirrored the content analysis procedures outlined in Chapter 7. However, rather than working from the interview coding guide in Appendix A, each subdomain identified by leaders was classified based on its similarity to LSA facet definitions as outlined in Appendix C. If any subdomain could not be appropriately categorized under one of these facets, it was taken as an indication of a missing facet of leader satisfaction. If any subdomain could be categorized under one of these facets, but was sufficiently distinct from items in the initial item pool intended to measure that facet, items were created to assess this unique content and were planned for administration in Survey Sample 2.

8.1.4.2 Item Analyses

The LSA item pool was subjected to rigorous psychometric testing in order to identify and remove problematic items. As recommended by Hinkin (1998) and Lane et al. (2016), interitem correlations for each facet were computed. Any item that correlated less than .40 with all other items within its facet was considered for deletion. In addition, Hinkin noted that it is important to avoid items that the majority of respondents answer in the same way, as these items generate little variance in final facet scores. As such, the mean, standard deviation, and endorsement rates of each response option were computed and items with low variability and items for which the endorsement rates were skewed/disproportional across response options were considered for deletion.

Internal consistency reliability of each facet was computed using Cronbach's alpha coefficient. Each facet was expected to demonstrate adequate reliability, as indicated by an alpha value of .70 or higher (Kline, 2000). In addition, corrected item-total correlations of each item were computed and any items with a corrected item-total

correlation that was substantially lower than the corrected item-total correlation of other items belonging to that scale (< .40) were removed from the scale.

Given the highly interdependent nature of job satisfaction facets (Scarpello & Campbell, 1983), effort was taken to minimize content overlap between facets, thereby reducing facet correlations. This was done by computing the correlation between items and non-keyed facets (Jackson, 1971). Any item that correlated more highly with a non-keyed facet than with its own facet was deleted. In addition, attempts were made to distinguish facets from one another by selecting items that maximized facet differences, as reflected by relatively lower item correlations with non-keyed facets.

Group differences were also considered when choosing which items to retain for the final scale. Mean differences were computed as a function of gender and age using Cohen's *d*. Values of |.20| were considered small effects, |.50| were considered medium, and |.80| were considered large. When selecting items for the final scale, attempts were made to reduce gender and age differences by favoring items with lower Cohen's *d* values, given approximate psychometric equivalence on all other criteria. Importantly, for any facet on which all items demonstrated medium-to-large effect sizes, this was taken as an indication of meaningful group differences on the construct, rather than group bias in a single item. For these scales, the Cohen's *d* values did not have an impact on the items that were selected.

The last criteria on which item decisions were made considered the content of the items themselves. Decisions were made such that overlap in item content was minimized. In some cases items with somewhat lower corrected item-total correlations were chosen in favor of items with higher corrected item-total correlations if the item content was

determined to add relevant and important breadth to the facet. A final constraint in the item selection process was to ensure that all facets were of equal length (i.e., six items per facet).

8.1.4.3 Dimensionality of Job Satisfaction

Dimensionality of job satisfaction was examined in both the LSA and MSQ. All analyses were computed using Mplus Version 7 (Muthén & Muthén, 1998-2012). A preliminary analysis of the data indicated that responses were very slightly skewed (LSA: -1.137 to -0.355; MSQ: -0.712 to -0.081). As such, and given the ordinal nature of the rating scale, the robust Weighted Least Squares (WLS) estimator was used for all analyses (Moshagen & Musch, 2014). Following the recommendations summarized by Vandenberg and Grelle (2009), in addition to testing the hypothesized model (as defined by the scale facets) a number of alternative models were tested based on previous research. The fit of these alternative models was compared to the fit of the hypothesized model to either provide support for or to disconfirm the hypothesized model.

A total of 10 CFA and nine ESEM models were tested for each job satisfaction measure. First a single-factor CFA model was tested to examine if there was evidence of unidimensionality among the measures. Next, a 20-factor model was tested in which each facet of job satisfaction was defined by its specified items, and where all latent satisfaction factors were allowed to correlate. This 20-factor model was examined using both CFA and ESEM.

For each analytic procedure, three- and four-factor models were also tested based on the findings of Tan and Hawkins (2000) and Hancer and George (2003), respectively. However, where previous researchers conducted factor analyses on single-item versions of the MSQ, the present study tested the factor structure using multi-item versions of

each subscale, for both the MSQ and the LSA. Given the high inter-factor correlations observed by previous researchers, additional three-, four-, and 20-factor models that added a higher-order general job satisfaction factor were also tested using both CFA and ESEM procedures. Last, a series of bifactor models were also tested where all items loaded onto both a general factor of job satisfaction, and their corresponding specific three-, four-, or 20-factors of satisfaction.

Following the recommendations of Morin and Asparouhov (2018), the ESEM-within-CFA (EWC) procedure was used to conduct the hierarchical ESEM analyses. EWC allows for the testing of a hierarchical ESEM model within a CFA framework by specifying start values for each indicator based on ESEM model values. For example, in the 20-factor hierarchical ESEM model, each item (indicator) was specified to load onto each factor. Start values for each item loading were obtained from the 20-factor ESEM solution. A referent indicator was specified for each factor. Based on the ESEM solution, referent factors were identified as those which have the highest loading on their target factor and for which cross-loadings on non-target factors were small. Within the hierarchical ESEM model, the factor loadings of referent indicators were fixed at their ESEM estimated value.

A number of fit statistics were consulted to examine model fit. Researchers have suggested that using WLS estimation can lead to biased estimates of the χ^2 statistics, particularly when sample sizes are low ($N \leq 300$) (Moshagen & Musch, 2014). As such, although those values are reported below, more emphasis was placed on the weighted root mean square residual (WRMR) and relative goodness-of-fit indices such as the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Root Mean Square

Error of Approximation (RMSEA). Following the recommendations of DiStefano, Liu, Jiang, and Shi (2018), WRMR values lower than 1.0 were interpreted as indicating good model fit. In addition, as recommended by Hu and Bentler (1999) CFI and TLI values greater than .90 were interpreted as suggesting good fit, with those higher than .95 suggesting excellent fit. A RMSEA value less than .08 suggested adequate fit, while those less than .05 were taken as indicators of good fit (Kline, 2015; Browne & Cudeck, 1993).

To compare the fit of alternative models, changes in CFI, TLI, and RMSEA were considered. Chi-squared significance testing was not conducted because comparisons were made between non-nested models. When comparing the goodness of fit across models, an increase in CFI and/or TLI of .005 to .010 and a decrease in RMSEA of .010 to .015 were considered indications of meaningful improvement in fit (Chen, 2007). In addition, the parameter estimates were also reviewed to consider how they aligned with theory when selecting the best-fitting model (Morin, Arens, & Marsh, 2016).

8.1.5 Results

8.1.5.1 Open-Ended Survey Questions

Responses to open-ended survey questions from *N* = 202 leaders in Survey Sample 1 were analyzed according to the procedure outlined above. Leaders' responses to each open-ended question were broken down into individual subdomains, such that each subdomain was descriptive of a single topic, thought, or example. A total of 1 210 subdomains were identified. Of those subdomains identified, 38 were removed from further analyses because they described affective responses to one's job, rather than behavioural descriptions of why one was satisfied or dissatisfied (e.g., "I feel happy more days than not", "How I feel at the end of the day").

A total of 1 172 subdomains were categorized according to one of the leader satisfaction facets identified in Appendix C. On average, each leader contributed six subdomains, with individual contributions ranging from one to 21. Table 5 presents the frequency with which each facet was identified, along with an example response. The most frequently mentioned subdomains were Work, Coworkers, and Compensation while the least frequently mentioned subdomains were Solitude, Value Congruence, Security, and Creativity. Interestingly, when asked to rate the importance of each facet to their own job satisfaction, leaders rated Security as highly important, despite the fact that it was one of the least frequently mentioned facets in open-ended question responses. This suggests that the number of times facets were mentioned should not be used as a proxy for how important they were to one's job satisfaction.

It is important to note that all facets identified in the LSA were represented in at least one of the leaders' responses. In addition, when asked to rate the importance of each facet to their own satisfaction, mean importance ratings for all facets were above the midpoint of the scale, suggesting that, on average, all facets were moderately to extremely important to leaders' job satisfaction. Also, leaders did not respond with any subdomains that could not be categorized into one of the LSA facets. Taken together, this was considered to be an indication that the LSA facets captured all factors of importance to leaders' job satisfaction and did not capture any irrelevant factors.

Although the interviews did not suggest any new facets of leader job satisfaction, there were some subdomains that reflected item content not adequately captured by the initial LSA item pool. There were a total of 71 subdomains that could be categorized under LSA facets that reflected unique content not captured by the initial item pool.

These subdomains could largely be captured by five major themes: (1) work/life balance, (2) achieving/surpassing goals and meeting targets, (3) helping customers, (4) problem solving, and (5) taking on work outside of one's role. In total, 45 additional research items were created to capture the content present in the subdomains that were not reflected in the initial LSA item pool.

The results of the interview content analysis also suggested a potential issue with the definition of the Strategic Planning facet. When coding responses under this subdomain, it became clear the facet captured two different components of strategic planning: the degree to which one's organization successfully carries out its strategic plan and how much input one has on the strategic direction of their organization. Responses suggested that it was the latter component that was more relevant to leaders' job satisfaction. Based on these additional responses and the subsequent item analyses, definitions to the LSA facets were modified. These modified definitions can be found in Appendix D.

Table 5

Summary of Open-Ended Responses in Survey Sample 1

Facet	*N*	*M*	*SD*	Example
AbUt	12	3.84	0.86	"I possess the qualities needed to maintain great performance."
Auto	47	3.78	1.00	"I have freedom to do things without getting permission."
Comp	147	4.05	1.01	"I get raises fairly regularly. I believe that my compensation is fair for the work that I do."
CoWo	149	4.00	0.99	"Working with lazy, disorderly, and careless people."
Creat	9	3.79	1.04	"Coming up with innovations for my business."
Ment	71	3.60	1.10	"Enjoy seeing younger people who are passionate about continuing to learn and growing in their area of expertise go on and chart their own course even if it is not with the team that I currently supervise."
PAch	96	3.97	1.01	"I think about all the accomplishments I made and mistakes that I have learned from."
Poli	57	3.74	1.04	"I wanted to donate the old computers to a charity, but my direct boss had me [throw] them away because she said it was against the policy to give the computers away."
Prom	41	3.99	0.94	"The most important thing is career advancing opportunities and potential in this company."
Reco	65	3.79	1.09	"I was recognized for being a top contributor to the company's revenue stream."
Secu	9	4.11	0.95	"Working for a financially stable company."

Note. *N* = number of subdomains that were identified under the corresponding facet; *M* = mean importance rating where 1 = not at all important, 2 = slightly important, 3 = moderately important, 4 = very important, 5 = extremely important; *SD* = standard deviation of importance rating. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Creat = Creativity, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 5 (continued)

Summary of Open-Ended Responses in Survey Sample 1

Facet	*N*	*M*	*SD*	Example
Serv	43	3.91	1.01	"I was helping to market a new music festival that my company was working on. It was very rewarding to set up this new community event that many different people would get to go to and enjoy."
Soli	3	3.97	0.92	"People are constantly interrupting me and I feel like I can't get any work done."
StPl	22	3.80	0.99	"I felt particularly satisfied with my job at a pitch meeting recently where my idea was well received and it was decided that we would move forward with the idea on a larger scale."
Supe	58	3.90	0.97	"My manager…finding ways to disparage me makes me want to quit."
TDev	86	4.07	0.95	"I direct my team but give them flexibility and guidance. To help the process along, I work right alongside them."
Tran	31	4.06	0.95	"The worst feeling is when I need information I feel should be relatively easy to get and there is no clear way to get it."
ValC	9	3.81	1.01	"Sometimes people will ask…you do to things that are clearly not within company guidelines."
Work	164	3.98	0.95	"I am satisfied with my job when I am challenged with complex problems."
WCon	53	4.22	0.78	"When our servers went down."

Note. *N* = number of subdomains that were identified under the corresponding facet; *M* = mean importance rating where 1 = not at all important, 2 = slightly important, 3 = moderately important, 4 = very important, 5 = extremely important; *SD* = standard deviation of importance rating. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Creat = Creativity, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

8.1.5.2 Item Analyses

After carefully considering each of the criteria described in Section 8.1.4.2, six items were selected for each facet. While every effort was made to select items with low age and gender effects, this was not always possible. The results indicated that for some facets, group differences were moderate to high for all items, suggesting that perhaps true differences exist for the facet. For example, across all Creativity items, younger participants (i.e., under the age of 40 years) endorsed higher levels of job satisfaction than did older participants (i.e., those aged 40 years and older). Descriptive statistics, internal consistency estimates, and intercorrelations between the six-item LSA facets are reported in Table 6.

Table 6

Descriptive Statistics and Intercorrelations for Six-Item Versions of LSA Facets in Survey Sample 1

	M	*SD*	*α*	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Global	3.88	0.84	-	-	.60	.46	.59	.52	.65	.60	.62	.62	.58	.62	.55	.63	.52	.63	.64	.55	.62	.61	.62	.54
AbUt	3.88	0.84	.91		-	.66	.61	.65	.73	.80	.77	.74	.68	.72	.76	.76	.67	.70	.66	.77	.69	.73	.72	.60
Auto	3.82	0.78	.87			-	.67	.72	.68	.71	.77	.72	.66	.69	.71	.69	.71	.72	.67	.74	.72	.72	.71	.67
Comp	3.72	0.95	.91				-	.62	.69	.65	.74	.72	.79	.74	.66	.62	.71	.72	.72	.61	.74	.71	.68	.65
CoWo	3.87	0.79	.89					-	.73	.72	.69	.70	.66	.69	.67	.65	.67	.73	.70	.75	.66	.70	.74	.65
Creat	3.82	0.86	.90						-	.78	.76	.79	.71	.80	.70	.76	.75	.77	.76	.72	.74	.77	.80	.70
Ment	3.80	0.86	.91							-	.80	.79	.72	.72	.75	.76	.74	.76	.66	.84	.72	.76	.77	.68
PAch	3.80	0.89	.93								-	.84	.83	.80	.77	.83	.72	.83	.78	.74	.81	.81	.83	.74
Poli	3.79	0.90	.91									-	.78	.81	.78	.79	.77	.84	.78	.75	.83	.88	.81	.73
Prom	3.70	0.97	.93										-	.77	.69	.70	.68	.80	.75	.63	.78	.74	.76	.68
Reco	3.85	0.89	.91											-	.75	.71	.65	.81	.76	.68	.75	.79	.79	.74
Secu	3.95	0.89	.92												-	.71	.70	.74	.72	.78	.71	.77	.76	.69
Serv	3.79	0.87	.91													-	.70	.78	.72	.74	.77	.79	.84	.68
Soli	3.80	0.87	.90														-	.75	.68	.75	.76	.72	.76	.71
StPl	3.79	0.94	.92															-	.80	.70	.79	.79	.79	.70
Supe	3.79	0.88	.91																-	.73	.86	.81	.83	.80
TDev	3.92	0.81	.89																	-	.70	.77	.74	.68
Tran	3.79	0.88	.91																		-	.82	.80	.75
ValC	3.82	0.93	.93																			-	.78	.69
Work	3.94	0.81	.89																				-	.79
WCon	4.09	0.77	.88																					-

Note. All correlations are significant at $p < .001$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Creat = Creativity, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

8.1.5.3 Dimensionality of Job Satisfaction of the LSA

Fit statistics for each of the models tested can be found in Table 7. The 20-factor CFA model was not positive definite due to high correlations between the latent variables. Also, the three- and four-factor hierarchical ESEM models demonstrated factor loadings on the intrinsic factor greater than 1.0, thereby resulting in Heywood Cases (Heywood, 1931). As such, results for these models are not presented. Results of the factor analyses indicated that CFI, TLI, and RMSEA values for all models suggested excellent model fit. In general, CFI and TLI values indicated that ESEM models fit the data better than their corresponding CFA models. Improvements in CFI were to be expected, given that a greater number of parameters were freely estimated in these ESEM models. However, the TLI and RMSEA are parsimony-adjusted indices that penalize model complexity (Kenny, 2015). As such, improvements in these fit statistics provide more persuasive support for the retention of ESEM models over their CFA counterparts. As would be expected, the ESEM models corresponded to reduced latent variable correlations when compared to CFA models since the shared variance in factors was partially accounted for by item cross-loadings rather than between factor correlations. For example, the average latent variable correlation in the four-factor ESEM was $\bar{r} = .52$, which was substantially lower than the average latent variable correlation in the four-factor CFA ($\bar{r} = .94$).

All models except the three-factor CFA and three-factor hierarchical CFA demonstrated changes in CFI and TLI values that suggested improved fit over the one-factor model, supporting the multidimensional nature of the job satisfaction construct that was assumed to underlie the LSA. Of those models for which an admissible solution was

achieved, fit statistics for the 20-factor models were found to have greater improvements in fit over the one-, three- and four-factor models. In particular, the 20-factor ESEM (ΔCFI = +.029, ΔTLI = +.025, $\Delta RMSEA$ = -.011), 20-factor hierarchical ESEM (ΔCFI = +.034, ΔTLI = +.032, $\Delta RMSEA$ = -.016), and 20-bifactor ESEM (ΔCFI = +.029, ΔTLI = +.024, $\Delta RMSEA$ = -.011) models were the only ones in which changes in each CFI, TLI, and RMSEA met Chen's (2007) guidelines for theoretically meaningful improvements in model fit over the unidimensional model (as defined above in Section 2.1.4.3).

Comparing fit statistics across these three models, the 20-factor hierarchical ESEM showed improvements in CFI and TLI over the 20-factor ESEM (ΔCFI = +.005, ΔTLI = +.007) and 20-factor bifactor ESEM (ΔCFI = +.005, ΔTLI = +.008); however, the change in RMSEA between these models was not significant ($\Delta RMSEA$ = -.005 for both the 20-factor ESEM and 20-factor bifactor ESEM). In addition, model fit statistics between the 20-factor ESEM and 20-factor bifactor ESEM were nearly identical. As such, following the recommendations of Morin et al. (2016), parameter estimates of these three models were examined to help inform model selection.

Analysis of the parameter estimates indicated that within the 20-factor ESEM model the average standardized factor loading of an item on its target factor was $M\lambda$ = .40. Although this was much larger than the average cross-loading of items within the model ($M\lambda$ = .05), cross-loadings did range from λ = -.29 to λ = .35. Taken together, these results suggested that specific factors may not have been clearly defined by their intended items. When examining the 20-factor hierarchical ESEM model, adding a higher-order factor in which all latent variables loaded onto a general factor of job satisfaction did improve model fit and the average latent variable loading on the general factor was $M\lambda$ =

.50. However, factor loadings of latent variables onto the general factor were not consistent. In particular, 10 of the 20 latent variable factors had loadings below $\lambda = .50$ onto the general factor, three of which were below $\lambda = .40$.

Examination of the parameter estimates for the 20-factor bifactor ESEM model suggested that modeling the shared variance between items using the bifactor approach may have been more appropriate than capturing this with a hierarchical factor. These parameter estimates are reported in Table 8. The average item loading onto the general factor in the bifactor model was $M\lambda = .76$, with values ranging from $\lambda = .60$ to $\lambda = .86$. As would be expected with a well-fitting bifactor model, the average item loading onto target specific factors was reduced relative to the 20-factor ESEM model ($M\lambda = .30$) and cross-loadings were also reduced, on average ($M\lambda = .00$). Despite their reduced magnitude, many of the target-specific item loadings remained statistically significant, suggesting the specific factors could still be identified even after partialing out variance shared with the general factor. In instances where items did not load particularly well on their target factors, it was often the case that the respective items also did not have substantial cross-loadings with other factors (e.g., Creativity and Policy items), suggesting that variance in these items was predominantly captured by the general factor. One notable exception was found for Team Development. Four items on the Team Development factor were found to load higher on the Mentorship factor than they were on their target factor. These findings suggested that there may be substantial content overlap in these two factors. This was an issue that was explored in greater detail in Survey Sample 2.

It should also be noted that the target loadings on the Strategic Planning factor were quite low. However, as discussed in Section 8.1.5.1, after analyzing responses to

open-ended survey questions the original definition for this facet was found to capture two different components: how well one's organization carried out its strategic plans versus how much input one had on the strategic direction of their organization. The latter definition was found to be more relevant to leaders' job satisfaction based on responses to open-ended survey questions. Items were selected in an attempt to capture that component. However, the initial item pool had an insufficient number of items capturing this component of the definition. As such, additional items were created and planned for administration in Survey Sample 2 to more adequately assess the revised definition of Strategic Planning. It was expected that the item loadings for the Strategic Planning factor would improve in subsequent analyses that leveraged these additional items.

Recently, some researchers have proposed additional statistical indices that can be computed as part of the evaluation of bifactor models (Rodriguez, Reise, & Haviland, 2016). In particular, it has been argued that coefficient omega may be a more appropriate assessment of scale reliability than coefficient alpha in the case of bifactor models (Gignac, 2014; Green & Yang, 2015). As described by Rodriguez et al., coefficient omega hierarchical (omegaH) can be computed to provide an estimate of the total score variance that is attributable to the general factor, and coefficient omega hierarchical subscale (omegaHS) can be used to provide an estimate of the percentage of subscale score variance that is attributable to the group factor, after controlling for the variance that is due to the general factor. Both indices can contribute meaningful information to the evaluation of bifactor models.

However, some researchers have noted that the use of the omega coefficient may not be appropriate when items cross-load onto more than one group factor (Reise,

Bonifay, & Haviland, 2013; Reise, Moore, & Haviland, 2010). As such, the use of these indices in an ESEM model may be problematic. In addition, although the 20-bifactor ESEM was selected as the best fitting model for the data, this decision was based in part on theoretical conceptualizations of job satisfaction in the literature. For reasons discussed throughout this dissertation, in practice, general job satisfaction should not be computed as a unit-weighted average of the facets of satisfaction. Also, the measurement of facet satisfaction is most appropriately conducted using the raw scale scores, which do not remove variance attributable to the general factor. For these reasons, omegaH and omegaHS were not computed.

Table 7

Fit Statistics for Models of Job Satisfaction for the LSA in Survey Sample 1

	χ^2	*df*	*CFI*	*TLI*	RMSEA	*90% CI*		*WRMR*
1. 1-factor	8426.181	7020	.958	.957	.033	.030	.036	1.101
2. 20-factor CFA	Not positive definite							
3. 3-factor CFA	8351.252	7010	.961	.961	.032	.029	.035	1.072
4. 4-factor CFA	8273.408	7014	.963	.963	.031	.028	.034	1.052
5. 20-factor H-CFA	7937.488	7000	.973	.972	.027	.023	.030	0.959
6. 3-factor H-CFA	8351.252	7017	.961	.961	.032	.029	.305	1.072
7. 4-factor H-CFA	8289.848	7016	.963	.962	.031	.028	.304	1.057
8. 20-Bifactor CFA	7815.302	6900	.973	.972	.027	.023	.030	0.943
9. 3-Bifactor CFA	7946.472	6900	.970	.969	.028	.025	.031	0.962
10. 4-Bifactor CFA	7949.348	6900	.970	.968	.029	.025	.031	0.971
11. 20-factor ESEM	5368.928	4930	.987	.982	.022	.017	.026	0.439
12. 3-factor ESEM	7801.643	6783	.970	.969	.028	.025	.031	0.906
13. 4-factor ESEM	7591.176	6666	.973	.971	.027	.024	.030	0.857
14. 20-factor H-ESEM	5381.151	5100	.992	.989	.017	.011	.022	0.443
15. 3-factor H-ESEM	Not positive definite							
16. 4-factor H-ESEM	Not positive definite							
17. 20-Bifactor ESEM	5262.029	4830	.987	.981	.022	.017	.026	0.425
18. 3-Bifactor ESEM	7591.176	6666	.973	.971	.027	.024	.030	0.857
19. 4-Bifactor ESEM	7419.360	6550	.975	.972	.027	.023	.030	0.812

Note. All models were estimated using Robust Weighted Least Squares (WLS). CFA = Confirmatory Factor Analysis, H = Hierarchical model, where the higher order factor was defined as global job satisfaction, ESEM = Exploratory Structural Equation modeling, *df* = degrees of freedom, *CFI* = Comparative Fit Index, *TLI* = Tucker-Lewis Index, *RMSEA* = Root Mean Square Error of Approximate, *90% CI* = 90% confidence interval for RMSEA, *WRMR* = Weighted Root Mean Square Residual.

Table 8

Standardized Factor Loadings (λ) for LSA 20-Factor Bifactor ESEM Solution in Survey Sample 1

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.AbUt																					
AbUt1	***.68***	***.42***	.10	-.08	.02	.03	.03	.09	*.21*	*-.15*	.04	*.12*	.07	-.02	-.04	-.10	.05	.00	.01	.04	-.11
AbUt2	***.72***	***.44***	-.09	-.02	.07	*.12*	-.02	.09	*-.13*	.02	.02	*.17*	.01	.03	-.12	-.07	.12	-.03	.05	*.24*	.02
AbUt3	***.75***	***.39***	-.02	-.02	.06	-.03	.05	-.08	-.09	.00	-.09	-.04	.03	-.07	.04	-.02	.05	-.06	*-.17*	-.09	.01
AbUt4	***.75***	***.35***	-.08	.04	.05	*-.12*	.11	-.03	-.07	-.08	.04	.04	.10	-.09	-.03	.00	.08	-.06	.01	-.05	.07
AbUt5	***.75***	***.46***	*.12*	-.06	-.08	-.01	*.11*	-.01	.11	*.08*	-.03	.06	-.04	-.05	.10	.02	.01	.05	.05	-.02	-.03
AbUt6	***.70***	***.41***	*-.12*	-.02	*-.13*	.09	.03	.05	-.07	.00	.01	.00	.01	*.15*	.00	-.07	-.04	-.04	.05	-.07	*-.25*
2.Auto																					
Auto1	***.61***	-.05	***.29***	.09	*.25*	*-.13*	*-.24*	.00	-.10	.00	.04	*.18*	.04	*.19*	.04	-.10	*-.15*	-.04	-.02	-.06	.00
Auto2	***.64***	.04	***.52***	-.03	.11	*.13*	-.03	-.01	.14	.05	-.04	.07	.06	-.05	-.10	.01	.09	.13	.00	.00	.02
Auto3	***.64***	.04	***.36***	*-.10*	.07	-.10	-.07	-.02	-.03	-.08	-.09	.09	.01	.08	.09	*-.11*	.04	-.08	.03	.07	*.13*
Auto4	***.69***	-.10	***.23***	*.22*	.02	-.02	*.19*	*.16*	-.09	-.04	-.01	-.07	.01	.02	-.08	-.08	.03	*-.13*	.05	-.04	-.07
Auto5	***.71***	-.05	***.40***	*.12*	.07	-.07	*.09*	.01	-.08	-.04	.09	.04	.04	-.01	.06	.02	-.05	.00	-.01	.10	.03
Auto6	***.73***	-.02	***.25***	-.05	-.01	*-.13*	-.03	.08	-.14	-.07	-.04	-.08	*-.14*	.05	-.09	.01	.01	-.01	.05	-.09	*-.29*
3.Comp																					
Comp1	***.59***	*-.12*	-.01	***.58***	*.13*	.02	-.01	.09	-.11	.13	.09	.01	.07	-.04	.13	.06	-.02	-.06	.05	.03	.07
Comp2	***.66***	-.03	-.02	***.48***	-.02	.02	-.06	-.09	-.03	*.15*	.09	-.01	-.08	.02	-.13	.01	.05	.15	.02	.05	.00
Comp3	***.68***	-.03	.05	***.45***	*-.12*	.01	*-.13*	-.12	-.07	.10	.11	-.01	*-.14*	*.13*	-.08	*.14*	.02	.11	-.10	-.04	.00
Comp4	***.70***	-.02	.00	***.42***	-.06	-.01	-.03	-.03	*.18*	.02	.00	-.04	-.11	.04	-.09	-.02	.01	*-.21*	-.11	-.08	.02
Comp5	***.70***	.04	.06	***.45***	-.07	-.02	-.06	*.12*	*.17*	*.15*	.01	.09	*-.11*	.09	*.11*	*.10*	.04	.00	-.03	*-.14*	*-.17*
Comp6	***.72***	.04	.07	***.33***	.01	.03	.14	.04	-.10	-.04	-.06	*-.17*	-.04	*.15*	.01	-.14	*-.27*	.09	.15	-.05	.00
4.CoWo																					
CoWo1	***.67***	.03	.00	.07	***.59***	.08	-.02	-.04	.06	*-.10*	.03	.04	*.11*	.02	.04	*-.14*	*.12*	.09	-.07	-.03	.06
CoWo2	***.61***	.08	.06	-.11	***.40***	.07	-.12	*-.16*	*-.29*	-.02	-.07	.10	-.03	.06	.01	-.01	-.03	.04	.05	.10	-.04
CoWo3	***.67***	*-.11*	-.03	.04	***.40***	-.09	.09	.07	.15	-.02	-.11	-.07	-.05	.03	.00	.07	.13	*-.26*	-.06	.07	.02
CoWo4	***.72***	.00	*.12*	*-.14*	***.35***	*.12*	-.07	.00	-.03	.06	-.04	-.06	*-.13*	.04	-.08	*.08*	-.07	*-.11*	.09	-.06	*-.11*
CoWo5	***.66***	-.04	*.15*	.02	***.50***	-.05	.04	.10	.04	.12	*.14*	-.03	-.07	-.06	-.03	.05	*.15*	.06	-.03	.04	.03
CoWo6	***.72***	.00	*.17*	-.06	***.32***	.08	*.21*	-.09	.00	.03	-.01	-.04	-.10	-.02	.09	.06	-.06	.04	*-.12*	-.03	-.02

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Creat = Creativity, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 8 (continued)

Standardized Factor Loadings (λ) for LSA 20-Factor Bifactor ESEM Solution in Survey Sample 1

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
5.Crea																					
Crea1	***.74***	*-.11*	-.03	*.11*	*.16*	***.39***	-.03	-.02	.08	.01	*.20*	-.04	.09	.05	.15	.01	.03	.03	.02	*.21*	.00
Crea2	***.75***	-.09	-.05	.02	.00	***.37***	-.08	-.05	-.11	*-.20*	.07	-.05	*-.17*	.04	.03	-.01	-.02	-.07	-.11	.10	.01
Crea3	***.72***	*.15*	.07	.10	.09	***.18***	*-.20*	-.07	.12	-.02	-.04	-.12	*.22*	.01	*-.15*	-.04	-.07	.01	.02	.08	.10
Crea4	***.78***	*.14*	-.02	*-.13*	.01	***.38***	.08	-.07	.00	-.03	.02	-.04	-.06	.05	-.04	.08	.01	.05	-.03	*-.16*	-.04
Crea5	***.74***	.05	*.11*	.03	-.02	***.34***	*.13*	-.04	.01	.06	.00	.07	*.11*	.02	.01	.03	.09	-.10	.10	*-.10*	-.04
Crea6	***.73***	.05	*-.27*	-.04	.00	***.31***	*.24*	.12	-.05	.01	.08	-.07	.02	.02	-.10	.10	-.15	-.02	.04	*-.14*	.11
6.Ment																					
Ment1	***.71***	*.12*	-.04	.01	*.14*	*.16*	**.14**	-.14	-.03	*-.15*	-.02	*.15*	*.22*	-.01	.08	*-.23*	.03	-.06	*-.15*	.06	.02
Ment2	***.83***	.06	*-.18*	-.01	.03	.03	**.06**	-.06	-.06	.06	*-.14*	*.14*	.00	.01	.01	*-.27*	.01	-.05	*-.16*	.05	-.08
Ment3	***.73***	*.13*	.05	*-.10*	.05	-.04	***.37***	-.10	.00	-.01	.02	.01	-.04	-.07	-.02	-.10	-.01	-.10	-.09	.03	*-.14*
Ment4	***.76***	.04	*.14*	.00	-.04	.09	***.35***	.02	.13	.07	.02	.01	-.04	-.02	-.15	-.05	.09	.06	.03	.01	-.02
Ment5	***.79***	.05	-.06	-.07	-.07	.08	***.49***	.00	*-.10*	*.13*	.00	-.01	-.03	.01	.02	-.06	*.18*	-.08	-.04	-.01	-.04
Ment6	***.75***	.04	*-.15*	-.04	*.12*	-.03	***.37***	.13	-.04	-.08	*-.14*	.01	-.02	.03	.02	-.10	.05	-.08	*.22*	-.08	.02
7.PAch																					
PAch1	***.81***	.06	.08	.00	-.08	.09	-.05	**.18**	.03	*.20*	.07	-.02	.13	.06	-.08	-.02	*.15*	-.05	.04	-.03	.08
PAch2	***.84***	.02	.02	-.05	-.04	*-.17*	.06	**-.03**	.01	.01	-.02	-.01	.07	.03	-.13	.03	-.18	-.04	*-.14*	-.02	-.07
PAch3	***.82***	.05	.02	*-.13*	*-.20*	-.01	-.04	**.02**	-.10	*.15*	.06	.04	-.04	-.04	-.01	.00	-.01	.04	-.12	-.03	-.11
PAch4	***.82***	-.04	.08	*.09*	-.08	-.08	-.06	**.22**	.03	.07	.03	.02	.01	*-.21*	-.15	-.07	.00	.05	.00	.06	-.02
PAch5	***.79***	.06	.02	-.03	-.02	-.06	.08	***.38***	.03	.07	.05	*-.10*	.06	.01	.11	.06	-.11	.01	-.09	-.06	.05
PAch6	***.83***	*.12*	.06	.01	.00	-.08	-.03	***.24***	.02	.01	*-.09*	-.05	.04	*-.11*	.02	-.06	-.04	-.02	.02	-.05	.08
8.Poli																					
Poli1	***.81***	-.09	-.02	-.08	-.04	*-.15*	-.12	.05	**-.01**	-.09	.05	.00	*-.12*	-.06	.04	*-.11*	.01	.16	-.01	.13	-.02
Poli2	***.80***	.01	-.07	.01	.01	-.02	-.10	.04	***.42***	*-.11*	.10	.00	.04	*.09*	.02	.04	-.02	-.08	*.11*	.02	-.12
Poli3	***.78***	*-.22*	-.11	*-.11*	-.09	-.02	-.03	-.09	**.13**	.02	*.13*	-.03	-.09	.02	.06	*-.18*	-.08	.13	.12	.05	-.12
Poli4	***.81***	.07	.05	*.11*	-.01	.02	.02	*.14*	***.19***	-.02	-.01	.03	-.05	-.05	.08	.03	-.03	.03	*.10*	*-.13*	-.06
Poli5	***.84***	.00	*-.13*	.00	-.01	.05	.09	-.07	***.14***	*.09*	-.08	.05	-.01	.07	.06	-.03	-.03	.10	*.12*	*-.12*	-.07
Poli6	***.78***	-.05	*-.10*	-.02	-.07	-.04	.04	.08	**.02**	-.01	*-.17*	.03	-.03	*-.15*	.02	-.03	.02	-.14	*.16*	.00	.05

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Creat = Creativity, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 8 (continued)

Standardized Factor Loadings (λ) for LSA 20-Factor Bifactor ESEM Solution in Survey Sample 1

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
9.Prom																					
Prom1	***.74***	-.04	.04	*.13*	*.17*	*-.12*	.00	.05	.05	***.48***	*.11*	-.02	.03	-.07	.04	-.01	-.10	.04	-.08	-.04	.09
Prom2	***.77***	*-.10*	.08	*.13*	.02	-.03	-.09	-.02	.03	***.31***	.08	-.05	.11	-.03	-.14	.07	-.01	-.04	-.06	-.01	-.01
Prom3	***.72***	-.07	-.10	*.13*	-.01	-.06	-.01	*.19*	-.07	***.19***	.02	-.01	-.10	.06	.00	-.08	-.02	.04	-.07	.00	*-.14*
Prom4	***.75***	.08	-.10	.07	*-.13*	-.05	.06	-.07	.05	***.37***	.05	.01	*-.14*	.09	.09	.03	.07	.07	-.02	.00	*-.16*
Prom5	***.72***	-.06	-.05	.10	-.06	.06	.05	*.11*	-.08	***.37***	*-.10*	-.04	*-.14*	-.07	.08	.06	*-.17*	.02	-.06	.04	.02
Prom6	***.80***	.02	-.05	*.16*	.00	.03	.07	.04	-.12	***.37***	.00	.00	.07	.04	.11	.02	-.14	-.04	*.12*	.01	-.04
10.Reco																					
Reco1	***.73***	-.08	-.03	*.17*	.06	*.12*	.07	.05	.05	.02	***.39***	*.15*	.05	.01	.06	-.03	.05	-.08	.06	.10	.05
Reco2	***.74***	.00	-.10	*.22*	-.06	*.16*	-.04	.05	.07	.09	***.34***	-.02	-.03	-.09	-.15	.02	.16	-.01	-.07	.09	.01
Reco3	***.79***	.00	.04	-.02	*-.10*	.05	*-.16*	.04	.05	*.10*	***.35***	.03	.00	*-.12*	.01	-.08	.03	.02	.04	-.07	.11
Reco4	***.78***	.00	-.06	-.03	*.12*	-.06	-.01	-.01	-.07	-.09	***.34***	.06	-.06	-.02	-.02	.03	-.11	.00	.04	.07	.05
Reco5	***.81***	.08	*.13*	.00	-.04	*.13*	-.06	-.09	.02	.05	***.21***	*-.11*	-.04	*-.16*	.07	.05	-.11	*-.14*	.02	*-.16*	-.03
Reco6	***.72***	*.11*	.07	.04	-.05	.10	.09	-.07	.00	*.16*	**.09**	*.11*	-.08	*-.17*	.08	.09	*-.17*	.03	*.13*	*-.16*	*.16*
11.Secu																					
Secu1	***.76***	-.03	.04	.01	.02	*.10*	-.02	-.03	-.04	-.08	*.14*	***.43***	.01	*-.11*	-.05	.02	.06	.10	-.06	.02	*-.12*
Secu2	***.75***	*.10*	.05	.03	.05	.01	.01	.05	.03	-.05	.00	***.53***	*.11*	-.06	.01	-.03	*.11*	.01	-.03	.01	*.09*
Secu3	***.73***	.04	.02	-.05	.01	-.04	-.05	.09	-.09	-.05	-.06	***.40***	*-.22*	-.01	.08	-.01	-.05	-.18	.06	.12	-.03
Secu4	***.72***	.05	*.09*	-.04	-.04	*-.10*	.05	*-.13*	.11	.09	*.11*	***.56***	.08	.07	-.03	.04	.02	-.02	.00	-.08	*.11*
Secu5	***.75***	*.13*	-.01	-.07	-.07	*-.12*	.02	-.04	-.05	.02	-.05	***.32***	*-.13*	.03	-.15	.08	.12	-.11	.04	-.05	-.01
Secu6	***.75***	*.14*	.01	.08	-.07	-.05	*.14*	-.05	.04	*-.11*	-.03	***.16***	-.10	.02	.07	.04	-.08	-.05	.02	-.07	.00
12.Serv																					
Serv1	***.76***	.03	.07	-.09	*.13*	.02	-.02	.04	-.01	-.06	.04	.06	***.33***	*-.12*	.08	-.06	-.06	.07	-.06	.08	-.10
Serv2	***.73***	.06	-.06	-.01	-.05	.08	.02	.00	-.09	*-.15*	.04	-.09	***.41***	.07	.05	*-.15*	-.11	.00	-.05	.02	-.06
Serv3	***.69***	.01	.09	-.11	*-.19*	.03	-.10	-.07	-.01	.01	.00	-.02	***.35***	.05	.08	*.08*	.03	.02	-.02	.05	-.05
Serv4	***.74***	.06	.04	*-.12*	-.01	-.05	-.04	.10	.01	*.15*	-.05	-.02	***.36***	.03	.02	.08	.09	-.07	*.13*	.11	.07
Serv5	***.80***	-.07	-.10	-.09	-.05	.06	.09	.06	.07	*-.11*	-.07	.01	***.21***	.05	*-.22*	.00	-.09	.02	.04	.02	-.08
Serv6	***.77***	*.14*	.03	*-.17*	-.10	-.07	.06	.09	.11	.03	-.10	.00	**.18**	-.02	-.12	-.01	.17	*.25*	.01	.06	-.03

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Creat = Creativity, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 8 (continued)

Standardized Factor Loadings (λ) for LSA 20-Factor Bifactor ESEM Solution in Survey Sample 1

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
13.Soli																					
Soli1	***.71***	.03	.09	*.17*	.05	.07	*-.20*	-.05	.02	-.07	*-.15*	-.05	*.12*	***.28***	-.02	-.04	.01	-.07	.09	*.15*	-.02
Soli2	***.75***	.06	.05	.07	-.06	-.02	-.12	-.08	.04	-.01	-.05	.01	.01	***.33***	*-.18*	-.06	-.01	-.05	-.08	-.02	*.17*
Soli3	***.80***	-.02	.07	*.10*	.04	.06	.03	-.08	-.06	.00	.00	-.03	.04	***.48***	.05	.03	.01	-.01	-.09	.06	-.02
Soli4	***.60***	.05	.00	.01	.10	.06	.03	*.15*	.04	.05	-.05	.07	-.09	***.40***	.00	.01	.12	.09	-.05	.02	.04
Soli5	***.75***	*-.12*	.04	-.01	-.07	.06	.01	-.11	.09	-.04	-.07	-.04	.08	***.28***	.00	*-.10*	.13	-.01	.08	*-.16*	.07
Soli6	***.73***	*-.10*	-.05	*.12*	-.07	-.05	*.19*	-.05	.04	.04	*-.11*	-.07	-.08	***.24***	.02	-.05	-.04	.05	-.03	-.06	*.18*
14.StPl																					
StPl1	***.78***	-.02	-.02	*.14*	*.13*	.00	-.06	.07	-.03	-.01	.10	-.06	*.18*	-.05	**.21**	-.04	-.02	.10	.00	.10	.07
StPl2	***.76***	*-.13*	*.10*	*.14*	.08	-.03	-.05	.04	.04	-.01	*.10*	-.09	*.17*	-.10	**.09**	.06	-.02	*.14*	-.01	*.15*	*.11*
StPl3	***.85***	-.01	.08	-.05	-.05	.03	-.10	-.15	.02	.06	.02	-.08	.01	*-.12*	**.15**	-.04	.16	-.04	*-.18*	-.06	.09
StPl4	***.82***	-.05	-.03	-.04	-.06	.00	-.04	.05	*.16*	.09	*-.11*	.03	-.01	.05	***.24***	*.14*	-.06	.12	-.01	-.03	*.11*
StPl5	***.80***	.04	-.08	-.09	.00	*.11*	-.06	*.11*	.06	*.12*	-.08	.01	-.04	-.05	**.13**	*.16*	-.07	.09	.03	.00	*.11*
StPl6	***.77***	.01	*-.15*	*-.14*	.06	*-.13*	.07	-.12	-.05	*.20*	-.02	*-.10*	*-.20*	-.02	**.16**	*.17*	-.02	-.08	*.10*	-.02	.05
15.Supe																					
Supe1	***.76***	.07	.04	.03	*.09*	.09	*-.18*	-.04	.13	.05	*.20*	.02	*.18*	-.02	.05	***.27***	.00	.09	.06	.08	*.11*
Supe2	***.77***	.00	*-.28*	*.11*	.04	*-.11*	-.12	-.15	-.04	.00	.02	*.13*	-.01	.02	*-.15*	***.39***	-.02	.03	.00	.09	-.07
Supe3	***.75***	*-.12*	.06	-.02	.00	.09	*-.13*	.06	.10	.04	-.01	-.04	-.10	.01	.10	***.34***	*.20*	-.05	.00	.13	-.07
Supe4	***.72***	*-.13*	*.10*	.00	-.01	*.14*	*-.18*	*.16*	*-.11*	.01	-.04	.04	-.01	-.04	.05	***.38***	-.08	.04	-.03	-.07	-.09
Supe5	***.79***	-.03	-.08	*.09*	.09	-.03	-.05	-.05	-.02	.04	-.06	.01	-.05	-.06	*.18*	***.37***	.01	-.03	.01	.10	.05
Supe6	***.79***	-.06	-.01	.05	*-.12*	.03	*.14*	-.01	-.03	-.02	-.05	-.05	-.04	-.05	.01	***.39***	-.01	.07	.02	*-.11*	.09
16.TDev																					
TDev1	***.68***	.07	.03	.02	*.15*	.03	.07	.08	-.07	*-.17*	.05	*.22*	*.17*	.11	.04	-.03	***.30***	-.01	.10	-.02	.09
TDev2	***.74***	.10	.07	-.05	*.19*	-.08	.01	*-.14*	.02	-.14	-.04	.02	.04	*.13*	-.01	.09	***.39***	-.13	-.07	-.14	.01
TDev3	***.74***	.02	.05	*-.13*	.08	-.06	*.24*	-.04	-.03	*-.13*	-.07	.04	.00	.12	-.04	.08	**-.12**	-.20	*-.16*	*-.18*	-.06
TDev4	***.73***	*.16*	-.06	-.08	.02	-.02	*.30*	.00	-.09	-.10	.09	.01	*-.13*	-.06	-.07	.01	**.26**	.05	.04	-.04	*-.10*
TDev5	***.72***	.07	-.08	-.09	*.10*	.03	*.25*	-.01	-.02	-.05	-.08	*.11*	*-.23*	.06	.02	-.01	**.20**	.12	-.09	.06	-.10
TDev6	***.76***	.03	*.11*	*-.12*	.09	-.02	*.26*	.12	.09	*-.24*	-.05	.07	-.03	*.14*	-.07	.08	**.08**	-.10	.10	*-.11*	-.05

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Creat = Creativity, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 8 (continued)

Standardized Factor Loadings (λ) for LSA 20-Factor Bifactor ESEM Solution in Survey Sample 1

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
17.Tran																					
Tran1	**.73**	.05	-.06	-.03	.08	-.02	*-.18*	.02	-.09	-.02	*.19*	-.02	.07	.05	-.03	-.04	.13	***.30***	*.15*	.07	.00
Tran2	**.82**	-.06	.09	-.02	*-.17*	-.04	*-.17*	-.04	-.11	.01	*-.14*	-.08	-.06	-.06	.05	.00	.05	**-.07**	.00	.09	-.02
Tran3	**.79**	*-.10*	-.04	.10	-.03	-.02	.01	*-.18*	.09	.04	*-.18*	*-.18*	.11	-.02	.05	-.04	-.05	**.12**	.04	-.05	*.12*
Tran4	**.75**	-.09	.08	-.01	-.07	.02	*-.14*	.02	.00	.08	*-.17*	-.09	.03	.06	.13	*.23*	*-.17*	***.36***	-.02	-.12	.05
Tran5	**.80**	*-.10*	.01	.07	*-.14*	-.05	-.06	.06	-.07	.01	*-.24*	-.02	.06	-.11	.00	*-.11*	.08	**.21**	.07	-.01	.06
Tran6	**.80**	-.04	-.04	.09	-.04	*-.15*	.03	-.04	.13	.03	.08	*-.14*	-.02	-.04	.07	.06	.07	***.19***	.06	.07	.10
18.ValC																					
ValC1	**.77**	.03	.04	-.07	.09	-.05	-.13	-.12	-.08	*-.14*	.05	-.07	.01	.05	.12	.06	-.06	-.04	**.13**	-.12	-.13
ValC2	**.79**	.01	.05	-.02	-.07	.06	.03	-.10	*.14*	*-.18*	-.01	*.09*	.05	-.05	-.07	-.08	.08	-.02	***.33***	-.05	-.01
ValC3	**.84**	-.06	.07	-.05	*-.16*	.05	.05	*-.13*	.01	.01	-.04	.01	-.05	-.02	-.02	.05	-.05	*.13*	***.22***	-.01	-.06
ValC4	**.79**	.07	.05	.02	-.08	-.03	.00	.01	*.23*	.06	.06	-.08	-.05	-.06	.02	.03	*.16*	.07	***.33***	.07	-.06
ValC5	**.86**	-.03	*-.09*	-.02	.01	-.03	.00	.02	-.03	.02	.08	.01	.02	.03	-.17	.05	-.13	.02	***.29***	-.06	-.10
ValC6	**.82**	.01	-.01	.03	.01	.01	.01	.12	-.01	-.01	.01	-.01	.03	-.06	.11	.00	.00	.06	***.38***	-.04	-.03
19.Work																					
Work1	**.76**	.01	-.02	.04	.06	.07	-.10	-.06	.03	-.05	.07	.05	*.12*	-.05	.08	.00	-.02	-.02	*-.14*	***.26***	.08
Work2	**.74**	-.01	-.01	-.03	*-.10*	-.01	.05	.07	-.06	-.02	.07	-.06	*.20*	.00	.01	-.01	.06	.02	-.06	***.37***	.05
Work3	**.73**	.07	.02	*-.12*	.10	-.07	-.09	-.02	-.14	-.01	.06	.00	.03	-.01	-.01	.06	-.02	-.11	.01	***.43***	.07
Work4	**.75**	*-.15*	*-.18*	-.04	-.06	.03	-.04	.15	-.07	-.01	*.18*	-.08	.17	.01	*-.18*	-.03	.07	-.02	-.06	**-.10**	-.01
Work5	**.76**	-.01	.04	*-.15*	.01	.02	.09	-.02	.16	.04	-.05	-.04	-.03	.13	-.05	.09	-.13	.05	-.03	***.25***	*.21*
Work6	**.79**	-.06	-.06	-.02	*.16*	.03	.10	-.10	.02	.09	*-.17*	.05	.12	-.05	-.13	*.15*	-.10	.08	.07	**.10**	.05
20.WCon																					
WCon1	**.69**	-.03	-.10	.04	-.01	.00	-.10	-.02	.08	-.08	-.04	.05	.03	-.06	.15	*-.16*	-.10	*-.24*	.02	*.26*	***.36***
WCon2	**.67**	*-.13*	*.12*	-.02	-.03	.01	-.10	-.04	-.10	*.13*	.10	-.06	-.02	.07	-.04	-.04	.11	.12	-.10	.03	***.46***
WCon3	**.71**	*-.12*	-.04	-.06	.04	-.05	-.03	-.05	.02	-.02	.10	*.17*	-.05	.09	.03	-.08	.04	-.01	-.01	.03	***.24***
WCon4	**.71**	-.05	.11	.09	-.01	-.09	.02	.11	-.09	*-.20*	.08	.01	.08	*.19*	.12	*.18*	-.17	.10	.07	.12	***.27***
WCon5	**.70**	.04	*-.11*	-.11	.07	*.14*	.04	.11	.09	.04	.07	.02	*-.19*	.10	-.11	.01	.01	.15	*-.18*	.03	***.44***
WCon6	**.71**	-.11	-.03	.04	-.05	-.02	-.02	.01	*-.24*	-.09	-.06	.00	.01	-.02	*.16*	.10	.02	.01	.02	-.06	***.37***

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Creat = Creativity, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

8.1.5.4 Dimensionality of Job Satisfaction of the MSQ

Since the use of ESEM in the study of the dimensionality of job satisfaction was largely missing from the literature, the dimensionality the MSQ was also examined using this technique. This allowed for the dimensionality of job satisfaction of the LSA to be compared to the dimensionality of a popular measure of job satisfaction. Because the analyses conducted in Section 8.1.5.3 found that ESEM models consistently displayed greater model fit than their CFA counterparts, the examination of dimensionality within the MSQ was limited to ESEM models. As with the LSA, 20-factor models were found to demonstrate statistically significant improvements in CFI, TLI, and RMSEA (Chen, 2007) over a one-factor model of the MSQ, whereas three- and four-factor models did not. As such, the following presentation of results is limited to 20-factor ESEM models.

Fit statistics for a unidimensional model of the MSQ, as well as a 20-factor ESEM, 20-factor hierarchical ESEM, and 20-factor bifactor ESEM can be found in Table 9. As with the LSA, there was evidence to suggest that a single-factor model fit the MSQ data well (*CFI* = .931, *TLI* = .930, *RMSEA* = .044). However, the 20-factor ESEM (Δ*CFI* = +.047, Δ*TLI* = +.036, Δ*RMSEA* = -.013), 20-factor hierarchical ESEM (Δ*CFI* = +.056, Δ*TLI* = +.050, Δ*RMSEA* = -.021), and 20-factor bifactor ESEM (Δ*CFI* = +.048, Δ*TLI* = +.036, Δ*RMSEA* = -.013) each demonstrated meaningful improvements in fit over the unidimensional model. As with the LSA, the hierarchical model showed improvements in CFI and TLI over the 20-factor ESEM (Δ*CFI* = +.009, Δ*TLI* = +.014) and 20-factor bifactor ESEM (Δ*CFI* = +.008, Δ*TLI* = +.014), but changes in RMSEA did not meet Chen's (2007) threshold of meaningful improvements in fit. The fact that the RMSEA of the hierarchical model did not differ meaningfully from the RMSEA of the 20-factor ESEM or the 20-factor bifactor ESEM models, despite the fact that the latter two models

had more freed parameters, suggested that it was not the most appropriate model for the data.

Once again, parameter estimates were examined to help determine the most appropriate model for the data. A pattern of results very similar to those reported for the LSA was observed. Within the 20-factor ESEM model, the average standardized factor loading of an item on its target factor was M_{λ} = .42, with an average cross-loading of M_{λ} = .05 (Min_{λ} = -.26, Max_{λ} = .40). As such, specific factors were not clearly defined by their intended items. Within the 20-factor hierarchical ESEM model, adding a higher-order factor resulted in an average loading of M_{λ} = .48 for latent variables onto the general factor, with six factor loadings below λ = .40. For the 20-factor bifactor ESEM model, the average item loading onto the general factor was M_{λ} = .72, with values ranging from λ = .51 to λ = .82. In addition, the average item loading onto target specific factors was reduced relative to the 20-factor ESEM model (M_{λ} = .30) and cross-loadings were also reduced, on average (M_{λ} = .00). Taken together, these data indicate that the 20-factor bifactor ESEM was also the best-fitting model for the MSQ.

Table 9

Fit Statistics for Models of Job Satisfaction for the MSQ in Survey Sample 1

	χ^2	*df*	*CFI*	*TLI*	RMSEA	*90% CI*		*WRMR*
1. 1-factor	6577.894	4850	.931	.930	.044	.041	.047	1.240
2. 20-factor ESEM	3688.394	3140	.978	.966	.031	.026	.035	0.416
3. 20-factor H-ESEM	3639.311	3310	.987	.980	.023	.018	.028	0.423
4. 20-Bifactor ESEM	3596.036	3060	.979	.966	.031	.026	.035	0.401

Note. All models were estimated using Robust Weighted Least Squares (WLS). H = Hierarchical model, where the higher order factor was defined as global job satisfaction, ESEM = Exploratory Structural Equation modeling, *df* = degrees of freedom, *CFI* = Comparative Fit Index, *TLI* = Tucker-Lewis Index, *RMSEA* = Root Mean Square Error of Approximate, *90% CI* = 90% confidence interval for RMSEA, *WRMR* = Weighted Root Mean Square Residual.

8.1.5.5 Concurrent Validity

As defined by Murphy and Davidshofer (2001), concurrent validity reflects the extent to which an assessment is correlated with measures of theoretically related constructs. Preliminary evidence of concurrent validity was evaluated by examining the zero-order correlations between the LSA, MOAQ, and MSQ. As outlined in Hypothesis 2, the relation between the global scale of the LSA and the MOAQ was expected to be high (i.e., $r \geq .50$), given that these scales were hypothesized to assess the same construct. As reported in Table 10, the global scale of the LSA was found to be highly correlated with the MOAQ ($r = .54$). Therefore, support for Hypothesis 2 was found.

Correlations between LSA and MSQ facets are also presented in Table 10. As stated in Hypothesis 3a, facets of the LSA that were identified a priori in the interview coding guide were expected to be strongly positively correlated (i.e., $r \geq .50$) with their MSQ counterparts. These relations are represented by bolded values in Table 10. The magnitude of the correlations between LSA facets and their MSQ counterparts ranged from $r = .63$ (LSA Autonomy – MSQ Authority) to $r = .84$ (LSA Promotion – MSQ Advancement), with an average value of $r = .73$. As predicted by Hypothesis 3b, this average was found to be larger than the average magnitude of correlations between novel facets of the LSA (i.e., Mentorship, Strategic Planning, Team Development, and Transparency) and MSQ facets ($\bar{r} = .65$, $r_{min} = .51$, $r_{max} = .80$). However, where Hypothesis 3b predicted that the magnitude of these relations would be moderate-to-weak (i.e., $r = .10$ to $.49$), the data suggested moderate-to-strong associations between these facets.

Table 10

Concurrent Validity between the LSA, MOAQ, and MSQ in Survey Sample 1

		MSQ																			
LSA	**MOAQ**	Ab	Ac	At	Ad	Ah	CP	Cm	CW	Cr	In	MV	Rc	Rs	Sc	Sr	SS	SH	ST	Vr	WC
G	.54	.58	.65	.64	.59	.49	.68	.53	.52	.59	.49	.49	.58	.54	.45	.50	.57	.68	.67	.60	.49
AbUt	.55	**.66**	.64	.61	.60	.62	.66	.56	.65	.73	.45	.59	.68	.65	.63	.69	.66	.58	.63	.62	.57
Auto	.52	.67	.63	.56	.59	**.63**	.64	.69	.65	.75	.63	.63	.66	**.73**	.58	.51	.57	.57	.64	.64	.62
Comp	.46	.57	.58	.54	.73	.53	.69	**.81**	.56	.63	.59	.49	.66	.58	.46	.40	.62	.61	.64	.58	.56
CoWo	.48	.68	.69	.60	.57	.57	.66	.61	**.70**	.68	.58	.55	.63	.66	.46	.51	.56	.59	.64	.66	.56
Creat	.47	.64	.72	.71	.62	.55	.74	.62	.59	**.72**	.63	.55	.68	.65	.45	.58	.65	.70	.68	.72	.61
Ment	.53	.68	.66	.66	.64	.76	.68	.61	.73	.73	.54	.60	.71	.72	.55	.70	.68	.62	.67	.70	.62
PAch	.58	.77	**.76**	.70	.75	.62	.74	.70	.67	.78	.57	.63	.76	.73	.61	.60	.69	.67	.71	.70	.62
Poli	.56	.68	.71	.72	.68	.63	**.79**	.68	.65	.79	.57	.65	.77	.73	.58	.61	.69	.72	.74	.67	.63
Prom	.51	.66	.67	.69	**.84**	.60	.73	.73	.59	.67	.56	.55	.72	.64	.53	.51	.67	.65	.69	.66	.57
Reco	.51	.66	.72	.70	.72	.56	.76	.66	.60	.69	.57	.58	**.79**	.66	.55	.57	.64	.71	.73	.68	.57
Secu	.61	.66	.66	.67	.59	.65	.67	.64	.69	.70	.53	.66	.73	.73	**.72**	.59	.62	.66	.71	.63	.61
Serv	.56	.71	.68	.65	.60	.52	.69	.59	.58	.74	.50	.59	.65	.65	.50	**.68**	**.70**	.59	.63	.67	.58
Soli	.44	.62	.61	.57	.59	.58	.67	.67	.64	.71	**.72**	.55	.65	.66	.50	.52	.67	.57	.62	.69	.66
StPl	.52	.63	.68	.67	.66	.51	.75	.61	.57	.67	.55	.61	.70	.63	.51	.54	.61	.80	.79	.65	.55
Supe	.57	.71	.75	.71	.72	.61	.79	.66	.66	.74	.63	.63	.75	.72	.58	.61	.68	**.74**	**.78**	.74	.62
TDev	.55	.66	.67	.64	.56	.72	.66	.59	.77	.72	.56	.61	.68	.75	.58	.65	.63	.63	.68	.67	.64
Tran	.54	.68	.69	.68	.67	.58	.79	.71	.63	.74	.60	.60	.72	.67	.54	.57	.70	.70	.74	.69	.62
ValC	.61	.71	.75	.70	.69	.62	.80	.68	.68	.78	.58	**.72**	.79	.73	.61	.62	.71	.71	.75	.71	.61
Work	.48	.70	.73	**.75**	.63	.58	.73	.63	.62	.73	.59	.57	.70	.68	.52	.60	.66	.67	.68	**.73**	.64
WCon	.43	.58	.65	.62	.60	.54	.67	.59	.57	.63	.61	.48	.66	.62	.47	.45	.59	.66	.68	.63	**.68**

Note. All correlations are significant at $p < .001$. Bolding denotes relations where a high degree of overlap was expected, as outlined in hypothesis 3a. G = Global job satisfaction, AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Creat = Creativity, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions, Ab = Ability Utilization, Ac = Achievement, At = Activity, Ad = Advancement, Ah = Authority, CP = Company Policies and Practices, Cm = Compensation, CW = Coworkers, Cr = Creativity, In = Independence, MV = Moral Values, Rc = Recognition, Rs = Responsibility, Sc = Security, Sr = Social Service, SS = Social Status, ST = Supervision-Technical, SH = Supervision-Human Relations, Vr = Variety, WC = Working Conditions.

8.2 Survey Sample 2

8.2.1 Participants

Participants were recruited from MTurk via a posting to the site which stated that participants were needed for research in job satisfaction. Only participants who indicated that they both currently held a management position at work and had at least one individual directly reporting to them were eligible to participate.

Responses were collected from $N = 572$ leaders. The data were cleaned to remove cases where participants failed to meet the eligibility requirements, or where they completed the materials more than once, with their first set of responses being retained. Leaders were also removed from further analyses if they failed to answer any questions beyond the demographics, or if they had previously been included in Survey Sample 1. Last, participants who failed to respond as instructed to the directed response items were removed. This resulted in a final sample size of $N = 374$.

Preliminary data cleaning analyses indicated there was a potential problem with the reliability of the data from the $N = 374$ leaders. Exceptionally low Cronbach's alpha values were observed for several scales. After confirming that no errors had occurred in the export or coding of the data, it was concluded that the low Cronbach's alpha values were due to inconsistency in the data.

At the time data collection occurred, large-scale unreliability in online samples had not been reported in the literature. In addition, the study procedures that were employed tended to conform to known best practices for online data collection (Buhrmester, Kwang, & Gosling, 2011). Taken together, pervasive unreliability in the data could not have been anticipated, and the scope of non-purposeful responding observed in Survey Sample 2 was unprecedented at the time of data collection.

However, in the time since this study was conducted, researchers have begun to report similar issues of data unreliability from MTurk samples (Bai, 2018; Dennis, Goodson, & Pearson, in press; Dreyfuss, 2018; Litman, Robinson, Moss, & Gautam, 2018). Automated bot accounts and server farmers have been identified as potential sources of unreliable data. Leveraging the reports of these researchers, a number of steps were taken to identify the source of the unreliability in Survey Sample 2. These steps included setting stricter criteria for the removal of duplicate cases and directed response items, confirming participant eligibility with self-reported work experience, and an examination of the validity of responses to open-ended text questions. A detailed description of these data cleaning procedures can be found in Appendix E.

Based on these screening procedures, a total of $N = 310$ participants were identified as unreliable, with the remaining $N = 240$ leaders considered to be purposeful responders. Sample demographics for the unreliable and purposeful responding groups can be found in Table 11. There is evidence to suggest that MTurk respondents who have been linked to server farms tend to perform significantly worse on basic English proficiency items than respondents who are not linked to these farms (Litman et al., 2018). As such, the pass rates of unreliable and purposeful responders were compared for the least-difficult ICAR vocabulary item. The pass rate among those identified as purposeful was approximately 62%, which aligned with independently collected research data. In contrast, only 38% of those identified as unreliable successfully passed this item. Although this should not be taken as a precise indicator of accuracy, the evidence seems to support the notion that, on average, those identified as unreliable were appropriately classified.

Among those leaders who were identified as purposeful responders, subsequent analyses were conducted to identify additional sources of unreliability in the data. As described in Appendix E, Mahalanobis distance was computed to identify multivariate outliers, and a within-person response consistency index was calculated to examine reliability at the individual level. Together, these analyses suggested the removal of an additional 77 cases, resulting in a reduced sample size of $N = 163$ reliable respondents. Demographics for this group are also reported in Table 11.

In general, there were few demographic differences between unreliable and purposeful responders. In both instances the sample predominately consisted of well-educated males who held a middle-level management position at a mid-sized organization. Across both groups the most frequently represented industries were Information, Manufacturing, and Finance and Insurance. Leaders ranged in age from 21 to 72 years ($M = 32.51$, $SD = 9.24$) in the purposeful group and from 22 to 62 years ($M = 29.49$, $SD = 6.08$) in the unreliable group.

Among the full purposeful responder sample, the average length of tenure in their current position was 4.93 years ($SD = 3.64$), with an average career tenure in a leadership position of 5.41 years ($SD = 4.59$). In the reduced sample ($N = 163$), average length of position tenure was 5.02 years ($SD = 3.77$) and average leadership tenure was 5.63 years ($SD = 5.11$). Most leaders indicated they were currently employed in a manager, assistant manager, or supervisor position. The average number of direct reports per leader was 14.48 ($SD = 15.28$) in the full purposeful sample, and 13.96 ($SD = 13.25$) in the reduced sample. On average, leaders indicated working 42.72 hours per week ($SD = 12.23$) in the full sample, and 42.98 hours per week ($SD = 10.55$) in the reduced sample.

Table 11

Demographic Percentages for Unreliable and Purposeful Responders in Survey Sample 2

	Unreliable	Purposeful	
		Full	Reduced
	(*N* = 310)	(*N* = 240)	(*N* = 163)
Gender			
Male	67.9	70.2	67.5
Female	32.1	29.8	32.5
Education			
High school/GED	0.0	1.7	2.5
Some college	3.4	5.5	5.5
2 year college diploma	4.2	4.2	4.3
3-4 year university degree	57.0	60.8	61.3
Master's degree	32.5	25.7	23.9
Doctoral degree	0.0	0.4	0.6
Professional degree (JD, MD)	3.0	1.7	1.8
Management Level			
Lower	6.8	16.6	16.6
Middle	73.4	68.5	68.1
Upper	19.8	14.9	15.3
Job Title			
Administrator	3.5	4.2	3.1
Assistant Manager	11.6	11.0	11.7
C-Suite (e.g., CEO, COO, CFO)	0.8	0.4	0.6
Controller	2.3	0.4	0.6
Coordinator	2.7	5.5	6.7
Department/Area Head	2.7	2.1	2.5
Director	2.7	4.2	4.9
Executive	8.1	5.5	6.7
Foreman	0.4	0.8	1.2
Lead	0.8	3.0	4.3
Manager	39.9	39.8	33.7
Officer	6.6	3.4	2.5
Organizer	0.8	0.0	0.0
Principal	1.2	0.0	0.0
President	0.0	0.4	0.6
Superintendent	0.4	0.0	0.0
Supervisor	9.7	10.2	10.4
Team Leader	5.4	7.6	9.2
Other	0.4	1.3	1.2

Table 11 **(continued)**

Demographic Percentages for Unreliable and Purposeful Responders in Survey Sample 2

	Unreliable	Purposeful	
		Full	Reduced
	(*N* = 310)	(*N* = 240)	(*N* = 163)
Industry			
Accommodation and Food Service	1.9	2.5	2.5
Administrative and Support Services	4.9	4.6	4.9
Agriculture, Forestry, Fishing, & Hunting	1.1	2.1	1.8
Arts, Entertainment, and Recreation	3.4	5.9	8.0
Construction	4.2	3.0	3.7
Education Services	6.1	6.3	8.6
Finance and Insurance	13.3	11.4	10.4
Government	0.8	0.4	0.6
Health Care and Social Assistance	6.8	3.8	5.5
Information	21.3	16.0	15.3
Management of Companies & Enterprises	17.1	10.5	8.0
Manufacturing	11.8	16.0	12.3
Other Services (Except Public Admin.)	1.1	3.0	3.1
Professional, Scientific, and Tech Services	3.0	6.8	8.0
Real Estate and Rental and Leasing	0.0	1.3	0.6
Retail Trade	1.5	4.6	4.9
Transportation and Warehousing	1.5	1.3	1.2
Wholesale Trade	0.0	0.4	0.6
Size of Organization (# of employees)			
1 – 49	15.5	22.1	22.7
50 – 999	49.7	52.5	50.3
1 000 – 4 999	11.3	15.8	17.2
5 000+	6.5	7.5	9.8

8.2.2 Measures

The reduced 123 item LSA was administered using the same instruction set and rating scale described in Survey Sample 1. The additional 45 research items that were drafted as a result of the analyses in Section 8.1.5.1 were also administered. The general satisfaction subscale of the MOAQ (Cammann et al., 1979), and the MSQ (Weiss et al., 1967) were also administered.

The BIMI was also administered. Developed to assess both agentic and communal forms of impression management, the BIMI is a 20-item self-report measure developed by Blasberg et al. (2013). Responses are provided on a nine-point Likert scale, ranging from strongly disagree to strongly agree. Blasberg et al. reported Cronbach's alpha reliability estimates ranging from .68 to .89 for both the agentic and communal subscales, across both respond honest and fake good conditions. Because sufficient reliability was not obtained for the BIMI scales in the present sample ($\alpha_{agentic}$ = .53 and $\alpha_{communal}$ = .63 in reduced sample), planned analyses could not be conducted with this measure.

8.2.3 Procedure

As in Survey Sample 1, participants were recruited for this study using an online advertisement posted on the MTurk website. This advertisement indicated that researchers were looking for individuals to participate in a study of job satisfaction. The recruitment for the second sample took place one year after the recruitment of Survey Sample 1 and the two samples were independent of one another.

Potential participants were told that they would be asked a series of questions to determine their eligibility to participate in the study, and that only those who were eligible to participate would be given access to the materials and compensated for their time. All individuals who expressed an interest in participating were provided with a

URL that directed them to the study materials hosted on Qualtrics. Participants were required to successfully complete a captcha before proceeding to the study materials. Then, they were presented with a letter of information, which again reminded them that only those who met the eligibility requirements would be compensated, and that eligibility questions could only be answered once. Participants were also asked to enter their MTurk Worker ID. This allowed us to determine if the same worker attempted to pass the eligibility screening by changing their responses on a second attempt.

Two eligibility screening questions were asked in a yes or no format: *Do you currently hold a management position at work* and *Do you currently have any people who directly report to you at work*. Only individuals who answered yes to both questions were eligible to participate in the study. Those who answered no to either or both questions were immediately informed they were not eligible to participate and were redirected to a study termination page.

Those individuals who answered yes to both screening questions were immediately informed that they were eligible to participate in the study. They were then presented with a series of demographic questions and asked to provide details about their work experience. Then, leaders completed all materials described in Sections 8.2.2 and 9.2. Directed response items to check for attentive responding were randomized throughout the materials.

The cognitive ability measure described in Section 9.2.5 was administered under timed conditions, after all other study materials had been completed. Participants were told they would have 10 minutes to complete as many items as they could. They were instructed not to seek help from anyone or to use aids such as calculators or search

engines. When participants clicked “next” they were presented with the first cognitive ability item. A timer was displayed in the upper left corner of the screen that counted down their time remaining. If participants did not reach the end of the cognitive ability section before the time expired, then the survey was programed to auto-advance them to the end of the section upon expiry of the timer. Participants were then asked to indicate the device on which they completed the materials (e.g., laptop/computer, tablet, mobile device, or other).

Upon completion of the study, participants received a HIT code which they were asked to enter into the original MTurk study page in order to be compensated for their participation. Once the correct HIT code had been successfully entered by participants they received a $4.00 credit to their MTurk accounts. The study took approximately one hour to complete.

8.2.4 Analytic Plan

In an examination of the impact of various data screening methods, Berinsky, Margolis, and Sances (2014) noted that removing a substantial portion of data on the basis of various attentiveness checks could put researchers at risk of creating reduced samples that over-represent specific meaningful characteristics. As such, Berinsky et al. recommended researchers present data analytic results at varying levels of attentiveness. Doing so allows for analyses to be conducted on the most reliable data available (i.e., in the reduced sample), while also demonstrating whether the same general pattern of results holds across a more diverse, albeit less reliable sample (i.e., the larger sample). Given the need for highly reliable data to inform psychometrically-sound item decisions, all item analyses were conducted using the reduced reliable sample of $N = 163$. However, when examining the dimensionality of job satisfaction and its relation with other scales,

results are presented among both the full sample of purposeful responders (*N* = 240) and the reduced sample (*N* = 163).

8.2.4.1 Item Analyses

After undergoing rigorous psychometric analyses using data collected from Survey Sample 1, the revised LSA item pool and additional 45 novel items were subjected to another round of vetting. Following the same procedures outlined in Section 8.1.4.2, item decisions were expected to be made based on a number of criteria, including corrected-item total correlations, endorsement rates, age and gender differences, and item correlations with non-keyed scales. Together, these criteria were also used to select single-item versions of each job satisfaction facet. Correlations with agentic and communal scales of the BIMI (Blasberg et al., 2013) could not be examined due to unreliability in the measure. Internal reliability estimates were expected to drop from those reported in Survey Sample 1 since those analyses were conducted on the same sample from which item decisions were made.

8.2.4.2 Subject Matter Expert Ratings

In addition, ratings were also collected from a group of SMEs. The factor analytic results presented in Section 8.1.5.3 demonstrated evidence of a single general factor of job satisfaction and they also indicated that there may be substantial construct overlap between the Mentorship and Team Development factors of leader satisfaction. As such, the purpose of these SME ratings was to ensure the facets of job satisfaction were conceptually distinct, and that items could be accurately sorted into their target facets. SMEs consisted of doctoral (*N* = 4) and Master's (*N* =1) students in I/O psychology. Each SME was given a list of the 20 LSA facets and their definitions. They were then presented with each LSA item and asked to indicate which facet of job satisfaction they

thought was measured by the item. One item was presented per page, in a randomized order, and SMEs were able to provide comments for any ratings they made. For an item to be considered successfully categorized into its target facet there needed to be 80% agreement (four out of five raters). Items were considered for deletion if SME agreement fell below this threshold.

8.2.4.3 Dimensionality of Job Satisfaction

Once again, the dimensionality of job satisfaction was examined in both the LSA and MSQ using the same procedure outlined in Survey Sample 1. Within each measure of job satisfaction, model fit statistics and parameter estimates of a single-factor model were compared to those of a 20-factor bifactor ESEM model. As in Survey Sample 1, responses to both the LSA and MSQ were slightly skewed (LSA: -0.729 to -0.016; MSQ: -0.620 to -0.069).

8.2.5 Results

8.2.5.1 Item Analyses and Subject Matter Expert Ratings

Corrected-item total correlations, endorsement frequencies, group differences across age and gender, and correlations with non-keyed facets were computed for each LSA item using the reduced purposeful responder sample (N = 163). These data were reviewed in consultation with SME ratings to further refine the LSA item pool. The results of the SME ratings indicated that for most facets, raters consistently sorted items into their correct facets. In particular, for the Team Development facet, for which several items had high cross-loadings with the Mentorship facet in Survey Sample 1, SMEs sorted seven of the items with 100% accuracy, one item with 80% accuracy, and only one item with less than 80% accuracy. In addition items were found to correlate more highly with their own scale than with the Mentorship scale. Taken together, these results

suggested a conceptually meaningful distinction between the Team Development and Mentorship facets. As such, both were retained.

The ratings provided by SMEs did indicate conceptual issues with two facets: Creativity and Work. SME agreement for Creativity items only reach 80% for three of seven items. The remaining items were consistently rated as either Ability Utilization or Autonomy items. Reflecting on the item content, it became apparent that many of the Creativity items could be considered more specific examples of Ability Utilization or Autonomy items. For example, the item "Your freedom to experiment with different methods" was intended to tap opportunities to be creative but tended to be rated as an Autonomy item. In addition, the Creativity items tended to correlate more highly with other facets than with their own scale. Based on these findings, the decision was made to drop the Creativity facet from the LSA since the intended meaning of the facet could be captured by other facets.

Similarly, the Work facet had fairly low SME ratings, with only three of nine items being correctly sorted with over 80% agreement, and an additional three items where none of the SMEs identified them as Work items. SMEs were found to consistently (i.e., greater than 80% agreement) sort these items as Ability Utilization (e.g., work on different types of tasks) or Personal Achievement (e.g., challenging tasks). These ratings were consistent with correlations observed between the LSA and MSQ in Sample 1 (see Table 10). In this sample, the Work facet of the LSA was found to be highly correlated with the Ability Utilization (r = .70), Activity (r = .75), and Variety (r = .73) facets of the MSQ. As such, the Work facet did not appear to capture any meaningfully unique concepts. Therefore, the Work facet was dropped from the LSA.

Item decisions were made for four-, five-, and six-item versions of each of the remaining 18 LSA facets. The average Cronbach's alpha value for the six-item versions of the LSA facets was *Mα* = .84 (*Min* = .79; *Max* = .90), for the five-item versions was *Mα* = .82 (*Min* = .76; *Max* = .88), and for the four-item versions was *Mα* = .78 (*Min* = .70; *Max* = .87). The data suggested that facet subscales could be shorted to five-items without substantially impacting the psychometric properties. However, reducing scales to four-items resulted in the reliability estimates for two facets dropping close to .70 (e.g., Solitude = .70; Ability Utilization = .73). As such, five-item versions of the scales were retained in order to balance psychometric properties with assessment brevity.

From these five-item scales, one item was selected from each facet to create the single-item indicator version of the LSA (the LSA-Brief). Items were selected as single-item indicators if: (1) their content captured the full breadth of the facet definition, (2) their corrected-item total correlations, endorsement frequencies, and correlations with other facets met previously discussed criteria, and (3) there was 100% accuracy in SME ratings of the item. Descriptive statistics, internal consistency estimates, and intercorrelations between the final LSA facets are reported in Table 12 and Table 13.

Table 12

Descriptive Statistics and Intercorrelations for the LSA-Extended in Survey Sample 2

	Full (*N* = 240)			Reduced (*N* = 163)																				
	M	***SD***	***α***	***M***	***SD***	***α***	**G**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
Global	3.63	0.82	-	3.59	0.79	-	-	.55	.53	.48	.51	.59	.56	48	.51	.53	.44	.48	.43	.44	.53	.48	.50	.54	.46
AbUt	3.68	0.65	.78	3.64	0.64	.79	.53	-	.69	.57	.64	.62	.68	.60	.56	.66	.59	.65	.55	.63	.64	.64	.62	.66	.68
Auto	3.67	0.66	.73	3.63	0.66	.76	.52	.71	-	.52	.65	.70	.68	.68	.56	.71	.65	.64	.61	.71	.67	.70	.63	.69	.68
Comp	3.44	0.84	.86	3.35	0.86	.88	.43	.57	.48	-	.46	.60	.76	.60	.75	.73	.57	.60	.58	.64	.60	.52	.69	.56	.53
CoWo	3.74	0.65	.76	3.71	0.64	.78	.50	.63	.65	.39	-	.60	.59	.53	.44	.60	.53	.61	.55	.55	.63	.75	.63	.67	.66
Ment	3.58	0.66	.77	3.56	0.66	.80	.58	.64	.67	.63	.65	-	.66	.70	.66	.72	.63	.65	.59	.71	.61	.67	.64	.69	.64
PAch	3.58	0.74	.79	3.50	0.74	.81	.53	.66	.67	.74	.53	.68	-	.63	.79	.77	.63	.68	.62	.71	.71	.63	.75	.67	.59
Poli	3.58	0.74	.80	3.52	0.71	.81	.45	.59	.68	.62	.60	.67	.67	-	.65	.71	.60	.55	.59	.75	.70	.65	.73	.70	.59
Prom	3.44	0.83	.85	3.35	0.86	.88	.50	.54	.52	.77	.40	.66	.83	.64	-	.72	.60	.63	.58	.72	.62	.55	.70	.61	.54
Reco	3.56	0.79	.84	3.49	0.83	.88	.52	.67	.71	.72	.58	.74	.78	.73	.69	-	.65	.63	.64	.78	.73	.68	.74	.72	.62
Secu	3.67	0.74	.82	3.65	0.75	.85	.42	.60	.61	.59	.52	.57	.65	.59	.59	.65	-	.49	.54	.63	.62	.61	.57	.59	.70
Serv	3.61	0.71	.77	3.53	0.72	.80	.45	.65	.63	.56	.57	.67	.64	.56	.59	.59	.46	-	.63	.60	.56	.63	.63	.66	.56
Soli	3.57	0.72	.76	3.54	0.72	.77	.40	.55	.57	.55	.50	.59	.57	.61	.53	.63	.50	.59	-	.62	.57	.61	.66	.61	.58
StPl	3.52	0.74	.81	3.49	0.72	.81	.42	.63	.70	.67	.57	.72	.75	.76	.70	.80	.59	.60	.64	-	.70	.65	.68	.71	.58
Supe	3.68	0.76	.83	3.62	0.80	.86	.49	.63	.66	.58	.62	.61	.71	.72	.61	.73	.63	.51	.55	.73	-	.64	.75	.66	.61
TDev	3.73	0.65	.78	3.69	0.66	.82	.46	.63	.68	.50	.79	.69	.60	.68	.49	.66	.59	.61	.59	.65	.64	-	.64	.69	.71
Tran	3.61	0.75	.84	3.54	0.77	.87	.47	.57	.59	.64	.60	.65	.74	.75	.68	.73	.57	.58	.66	.75	.69	.63	-	.71	.63
ValC	3.69	0.71	.82	3.66	0.70	.82	.52	.66	.69	.51	.70	.69	.67	.71	.55	.70	.56	.64	.57	.68	.71	.69	.69	-	.64
WCon	3.75	0.71	.78	3.74	0.72	.80	.39	.64	.64	.50	.64	.59	.54	.52	.49	.59	.68	.50	.57	.56	.50	.71	.59	.60	-

Note. LSA-Extended = five-items per facet. All correlations were significant at $p < .001$. Intercorrelations within full sample ($N = 240$) are reported above the diagonal and intercorrelations within the reduced sample ($N = 163$) are reported below the diagonal. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 13

Descriptive Statistics and Intercorrelations for the LSA-Brief in Survey Sample 2

	Full (N = 240)		Reduced (N = 163)																			
	M	***SD***	***M***	***SD***	**G**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**
Global	3.63	0.82	3.59	0.79	-	.53	.44	.47	.34	.40	.51	.35	.36	.50	.35	.33	.41	.41	.36	.35	.36	.40	.33
AbUt	3.63	0.85	3.56	0.83	.47	-	.42	.34	.36	.28	.42	.35	.26	.50	.38	.34	.34	.36	.41	.35	.36	.39	.45
Auto	3.69	0.89	3.67	0.88	.44	.41	-	.18	.32	47	.32	.36	.20	.47	.36	.32	.35	.28	.40	.33	.31	.29	.26
Comp	3.40	0.98	3.31	0.97	.39	.30	.13	-	.20	.26	.48	.36	.44	.40	.38	.30	.28	.45	.32	.18	.46	.33	.28
CoWo	3.75	0.94	3.75	0.91	.32	.34	.27	.16	-	.32	.36	.40	.26	.32	.35	.34	.33	.42	.40	.34	.33	.44	.44
Ment	3.52	0.90	3.53	0.89	.38	.26	.44	.27	.28	-	.24	.37	.25	.45	.36	.32	.35	.35	.35	.35	.29	.31	.30
PAch	3.64	1.00	3.54	0.94	.46	.32	.29	.43	.26	.21	-	.38	.50	.49	.31	.38	.33	.44	.44	.27	.44	.35	.32
Poli	3.69	0.99	3.65	0.99	.31	.31	.34	.37	.42	.30	.34	-	.39	.45	.44	.30	.31	.42	.51	.30	.42	.41	.29
Prom	3.51	1.02	3.38	1.02	.40	.25	.26	.51	.24	.35	.53	.46	-	.48	.44	.38	.32	.52	.33	.24	.51	.40	.26
Reco	3.55	1.02	3.46	1.04	.49	.49	.50	.41	.34	.42	.52	.43	.49	-	.35	.39	.38	.55	.50	.43	.51	.36	.36
Secu	3.75	0.96	3.69	0.96	.32	.36	.30	.39	.30	.36	.30	.49	.46	.34	-	.19	.24	.35	.33	.26	.35	.34	.34
Serv	3.66	0.97	3.58	0.98	.36	.30	.33	.30	.30	.31	.40	.31	.41	.39	.15	-	.28	.39	.40	.32	.41	.41	.23
Soli	3.66	1.01	3.69	0.97	.35	.26	.29	.25	.33	.34	.25	.24	.32	.38	.24	.27	-	.36	.29	.32	.34	.32	.26
StPl	3.49	0.95	3.43	0.92	.39	.30	.29	.45	.35	.36	.41	.40	.53	.50	.31	.35	.38	-	.40	.38	.44	.48	.39
Supe	3.65	0.95	3.58	0.99	.35	.38	.39	.28	.39	.29	.48	.51	.41	.53	.32	.35	.26	.38	-	.29	.46	.39	.30
TDev	3.80	0.90	3.75	0.85	.38	.39	.33	.19	.36	.40	.29	.32	.18	.44	.20	.34	.34	.37	.30	-	.24	.29	.39
Tran	3.58	0.91	3.52	0.94	.36	.31	.36	.41	.33	.34	.40	.48	.49	.54	.38	.41	.33	.40	.51	.28	-	.44	.21
ValC	3.72	0.93	3.66	0.89	.33	.29	.29	.27	.45	.31	.32	.45	.38	.34	.32	.37	.27	.45	.35	.21	.45	-	.33
WCon	3.73	0.97	3.66	0.98	.30	.44	.29	.20	.46	.32	.24	.27	.24	.35	.35	.19	.26	.33	.28	.51	.12	.31	-

Note. LSA-Brief = one item per facet. All correlations were significant at $p < .001$. Intercorrelations within full sample (N = 240) are reported above the diagonal and intercorrelations within the reduced sample (N = 163) are reported below the diagonal. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions.

8.2.5.2 Dimensionality of Job Satisfaction

Model fit statistics for the LSA-Extended and MSQ are reported in Table 14. Since item analyses suggested the removal of two facets from the LSA, Creativity and Work, an 18-factor bifactor model was tested rather than a 20-factor model. Once again, the one-factor model was found to fit the data well for both measures of job satisfaction. With respect to the LSA, the bifactor ESEM model led to improvements in fit in both the full (ΔCFI = +.042; ΔTLI = +.034; $\Delta RMSEA$ = -.012) and the reduced (ΔCFI = +.050; ΔTLI = +.041; $\Delta RMSEA$ = -.016) samples. For the MSQ, the bifactor ESEM model led to meaningful improvements in CFI and TLI (ΔCFI = +.034; ΔTLI = +.024), but improvements in RMSEA were not significant ($\Delta RMSEA$ = - .008) in the full sample. As noted in Table 14, standard errors could not be estimated for the 20-factor bifactor ESEM of the MSQ in the reduced sample because the sample size was insufficient. As such, model fit comparisons could not be made for the MSQ in the reduced sample.

An examination of the LSA parameter estimates of the bifactor models revealed that all items loaded highly onto the general factor in both the full (M_λ = .64, Min_λ = .54, Max_λ = .77) and the reduced (M_λ = .65, Min_λ = .50, Max_λ = .79) samples. However, item loadings onto specific factors were quite low for both the full (M_λ = .25) and reduced (M_λ = .30) samples. Similarly for the MSQ in the full sample, all items loaded highly onto the general factor (M_λ = .62, Min_λ = .37, Max_λ = .74), with factor-specific loadings being quite low in comparison (M_λ = .25). The implications of this pattern of loadings are addressed below in Section 10.1.3. Parameter estimates for the LSA bifactor ESEM model in the full sample can be found in Table 15 and in the reduced sample in Table 16.

Table 14

Model Fit Statistics for the LSA and MSQ in Survey Sample 2

	χ^2	*df*	*CFI*	*TLI*	RMSEA	*90% CI*		*WRMR*
Full Sample								
LSA								
1-factor	4920.92	3915	.944	.943	.033	.030	.036	1.105
18-Bifactor ESEM	2724.62	2466	.986	.977	.021	.015	.026	0.449
MSQ								
1-factor	5826.60	4752	.948	.947	.032	.029	.035	1.135
20-Bifactor ESEM	3348.55	2982	.982	.971	.024	.019	.028	0.468
Reduced Sample								
LSA								
1-factor	4915.73	3915	.935	.934	.040	.036	.0443	1.167
18-Bifactor ESEM	2703.86	2466	.985	.975	.024	.017	.030	0.417
MSQ								
1-factor	5845.58	4752	.939	.938	.038	.034	.041	1.184
20-Bifactor ESEM	*standard errors could not be estimated*							

Note. All models were estimated using Robust Weighted Least Squares (WLS). H = Hierarchical model, where the higher order factor was defined as global job satisfaction, ESEM = Exploratory Structural Equation modeling, *df* = degrees of freedom, *CFI* = Comparative Fit Index, *TLI* = Tucker-Lewis Index, *RMSEA* = Root Mean Square Error of Approximate, *90% CI* = 90% confidence interval for RMSEA, *WRMR* = Weighted Root Mean Square Residual.

Table 15

Standardized Factor Loadings (λ) for LSA 18-Factor Bifactor ESEM in Full Survey Sample 2

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1.AbUt																			
AbUt1	***.65***	**.13**	.07	.05	*.17*	*-.15*	.07	-.12	*-.25*	-.02	.07	-.13	-.04	.09	-.05	-.03	-.13	.01	*.18*
AbUt4	***.61***	***.38***	-.12	-.04	.10	*-.22*	.03	-.05	.03	-.04	*.24*	.09	.05	.04	.00	-.03	-.01	-.13	-.11
AbUt2	***.60***	***.24***	-.09	.09	.02	.05	.10	.06	.06	-.03	.01	-.03	.02	.03	.07	-.04	-.05	*.29*	*.12*
AbUt6	***.59***	***.41***	*.19*	.02	.01	.12	-.05	-.03	.02	.03	-.10	*.13*	-.05	.05	.03	.03	.01	.13	.03
AbUt7	***.64***	***.43***	-.05	.00	-.15	*.18*	-.05	.02	*-.14*	-.06	-.06	*.10*	-.09	*-.19*	-.03	-.02	-.04	-.07	*.14*
2.Auto																			
Auto5	***.58***	.06	**.02**	*-.29*	.13	.06	.04	-.02	*-.21*	.04	*.15*	-.12	.05	.10	-.09	-.18	.05	*-.14*	-.05
Auto2	***.63***	-.09	***.54***	-.08	.05	-.08	.06	-.12	.00	.03	.01	.07	*-.14*	-.02	-.15	.07	.00	.00	.11
Auto4	***.67***	-.07	**-.02**	-.02	-.05	.18	.08	.10	-.09	.02	.01	.08	-.03	*-.16*	-.10	-.06	-.07	.05	.02
Auto1	***.66***	.07	**.10**	-.12	.03	.00	-.11	*-.19*	.01	-.03	*.13*	.04	.05	-.05	.00	.07	*-.14*	-.07	-.02
Auto6	***.57***	.17	**.21**	.04	-.05	.04	.04	*.33*	-.10	-.09	-.05	.01	-.01	.07	*.30*	.04	-.10	.07	.11
3.Comp																			
Comp1	***.56***	-.05	-.02	***.45***	.04	-.04	*.20*	.13	.06	.02	-.02	-.02	-.08	-.12	*-.23*	-.10	.08	-.03	.05
Comp3	***.65***	-.01	-.09	***.37***	.01	.09	-.01	.08	*.15*	.02	-.07	.06	.00	.07	.07	*-.12*	.11	.04	*-.14*
Comp6	***.67***	.05	-.01	***.42***	-.07	-.05	-.09	-.11	*.13*	.05	.11	.01	.07	.02	.05	-.05	.05	-.14	.08
Comp2	***.69***	.08	-.04	***.49***	*-.14*	.05	-.02	*-.13*	*.12*	.12	.07	-.04	.03	.05	-.03	.07	-.06	-.05	-.05
Comp7	***.69***	-.04	.05	***.30***	.09	*-.15*	-.12	.07	*.19*	.00	.00	.03	.06	.03	-.03	-.01	-.08	*-.12*	-.10
4.CoWo																			
CoWo5	***.51***	.09	.06	*-.18*	***.38***	.10	-.01	-.10	*-.17*	.12	.01	*.20*	-.07	.04	*.14*	.12	-.03	.07	.11
CoWo1	***.58***	-.06	.04	-.13	**.18**	-.11	-.03	-.04	-.06	-.05	*-.18*	-.01	.03	*-.21*	-.01	*.23*	-.04	.09	*.21*
CoWo6	***.59***	-.10	-.11	*-.16*	**.04**	*.16*	.12	-.14	-.14	-.05	.10	-.05	.04	-.03	-.13	*.43*	.04	-.04	.08
CoWo2	***.61***	.11	.01	*-.17*	**-.23**	.04	-.02	-.07	*-.21*	.10	-.07	.07	-.07	-.10	-.03	.12	.07	.15	*.23*
CoWo7	***.67***	-.02	.00	.00	**-.17**	-.08	.05	.01	*-.16*	-.11	-.01	-.01	.00	*.14*	.10	.13	-.07	.08	.03

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 15 (continued)

Standardized Factor Loadings (λ) for LSA 18-Factor Bifactor ESEM in Full Survey Sample 2

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
5.Ment																			
Ment3	***.59***	.01	.10	*-.17*	.08	**.27**	-.07	.11	-.09	.04	.08	.00	-.02	.04	*-.19*	-.11	-.04	*-.23*	.00
Ment2	***.66***	.04	-.04	-.01	.10	**.04**	*-.24*	.03	.05	-.03	.04	.12	*-.11*	-.02	.07	-.12	*-.17*	-.03	*-.14*
Ment1	***.60***	.08	-.15	.02	.05	***.43***	.03	.09	.07	.05	-.07	.02	.05	-.07	-.10	.10	-.04	.08	-.02
Ment5	***.69***	-.01	-.01	.02	-.09	**.20**	.06	-.07	-.01	.04	.01	*.16*	-.04	*.17*	*.13*	.00	-.02	-.07	*.16*
Ment4	***.68***	*-.12*	-.09	.01	*-.15*	**-.02**	*-.15*	.04	-.02	-.02	-.03	.13	-.05	-.01	-.12	-.08	.01	.11	*.15*
6.PAch																			
PAch4	***.64***	.12	.01	*.14*	.06	-.09	***.26***	-.16	*.18*	.06	-.07	-.07	*-.13*	.00	-.04	-.08	.10	.02	.02
PAch2	***.61***	-.07	-.05	-.03	-.05	.04	***.46***	-.03	*.15*	-.03	*.16*	.09	.01	-.07	.07	.06	.04	.03	-.07
PAch5	***.70***	*.14*	.02	.07	-.03	.03	**.02**	-.03	-.01	-.02	*.12*	.09	*-.14*	-.09	-.01	-.08	*.21*	.10	-.04
PAch1	***.75***	.01	*.21*	.07	.01	.05	**.15**	.14	*.16*	.15	-.06	.00	*.12*	.10	-.03	.02	-.10	-.05	-.06
PAch7	***.63***	-.02	-.12	*.19*	.01	.03	**-.16**	-.10	*.31*	-.07	.08	.00	-.07	-.01	.02	-.07	.00	*-.16*	*-.17*
7.Poli																			
Poli5	***.58***	-.13	.01	-.06	.02	.03	.00	**.17**	-.02	-.01	*.13*	-.08	.06	*-.15*	.07	*-.21*	*.15*	-.05	*-.16*
Poli3	***.70***	-.08	-.01	.01	-.10	.06	-.03	**-.24**	-.09	-.21	-.05	-.04	.03	-.18	.02	-.04	.03	.00	-.20
Poli7	***.72***	-.08	-.16	.01	-.07	.05	*-.13*	**.26**	-.06	-.10	-.02	-.12	-.04	.04	.10	-.08	.03	.02	.00
Poli8	***.67***	-.06	.02	.07	.06	.13	*-.25*	**.05**	-.11	.02	.08	-.05	.02	.09	-.03	.04	.03	*.20*	*-.17*
Poli9	***.69***	.00	.08	.03	*-.21*	.17	.08	**.23**	-.01	-.07	.02	.00	.09	-.06	.00	.08	.08	.03	-.14
8.Prom																			
Prom2	***.64***	.03	*-.12*	*.16*	.10	.07	*.21*	-.09	***.30***	-.13	*-.13*	-.01	-.07	.04	-.03	-.08	.07	.00	-.01
Prom6	***.65***	.11	.00	*.16*	-.01	*-.19*	.09	.16	***.37***	.13	.06	.09	-.07	-.14	.06	-.01	.02	-.09	-.11
Prom4	***.63***	*-.13*	.00	.01	.10	.09	-.04	-.01	***.46***	.00	.05	.02	*.13*	-.01	.06	-.06	.06	-.05	-.07
Prom5	***.69***	-.10	-.01	.11	-.10	.11	.12	-.18	***.39***	-.07	.07	-.05	.04	.02	.00	-.08	-.01	.06	-.02
Prom7	***.64***	-.03	.04	*.26*	-.10	-.10	-.09	.10	***.35***	.05	.02	*.12*	-.11	.02	-.09	-.03	-.01	-.01	.01

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 15 (continued)

Standardized Factor Loadings (λ) for LSA 18-Factor Bifactor ESEM in Full Survey Sample 2

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
9.Reco																			
Reco3	***.74***	.03	.12	.01	.20	-.14	-.12	.00	-.03	**.16**	-.07	*-.25*	.04	-.09	-.05	-.11	-.01	-.12	-.04
Reco1	***.67***	-.06	.00	.08	.08	.13	.06	-.03	.03	***.34***	.03	-.09	.00	.05	.10	-.09	-.04	*.21*	-.03
Reco2	***.75***	-.06	-.05	*.11*	-.06	-.07	*.17*	.03	-.09	***.21***	.01	-.03	.08	-.01	-.08	-.09	-.05	-.03	*-.12*
Reco4	***.75***	-.04	-.04	*.16*	-.03	.10	.00	.03	.00	***.28***	-.06	.11	*-.12*	.04	-.03	.07	.07	-.05	.03
Reco5	***.71***	.07	-.08	-.01	*-.16*	.08	-.13	.05	*.18*	**.04**	*-.21*	-.03	*-.12*	.08	.02	.08	.00	*-.13*	-.01
10.Secu																			
Secu4	***.59***	-.06	-.11	.02	-.03	-.05	.04	.22	.01	.11	***.40***	-.05	*-.13*	-.03	.04	.05	-.08	-.13	.13
Secu5	***.54***	.01	.03	*-.11*	-.10	.07	.10	.05	-.02	*-.13*	***.47***	-.02	-.03	.05	-.03	-.08	-.02	*-.18*	.09
Secu1	***.60***	.13	.00	.08	.03	*-.17*	-.08	.00	.10	.01	***.32***	-.09	.02	-.07	.06	*.14*	-.08	-.03	*.23*
Secu3	***.63***	-.01	.19	.03	-.06	.00	.01	-.14	-.05	-.14	***.39***	*-.18*	-.03	-.03	-.05	-.06	-.03	.01	-.01
Secu2	***.64***	.04	-.09	*.12*	*.15*	.09	-.01	-.05	.06	.12	***.40***	-.02	.06	.01	.07	.03	.10	*.22*	*.21*
11.Serv																			
Serv4	***.58***	.04	*.21*	-.04	.17	-.08	.02	-.02	.05	-.12	-.09	***.26***	.02	.05	-.12	-.15	*.15*	.11	.00
Serv5	***.54***	.08	.01	.01	.17	.14	-.01	-.13	.08	.00	-.12	***.35***	.13	*-.25*	.11	.11	*-.19*	.06	*-.15*
Serv6	***.60***	.09	.05	.12	.13	.05	.06	-.07	.02	*-.28*	-.05	***.22***	-.05	*.21*	-.06	*.15*	.09	-.07	.02
Serv2	***.56***	*.17*	*-.13*	-.09	-.07	.01	.01	.00	*.13*	.12	-.05	***.42***	.01	.09	-.01	.06	-.04	-.08	.07
Serv3	***.66***	-.06	.07	.07	-.12	.00	.01	.08	-.09	-.02	-.10	***.39***	*.11*	-.07	*-.17*	-.07	-.02	.09	-.04
12.Soli																			
Soli1	***.56***	*.19*	-.14	.02	.16	*.19*	.09	-.06	-.07	.06	.01	.07	***.31***	-.02	*-.14*	.12	.05	-.09	.01
Soli6	***.54***	.03	*-.19*	.02	-.01	-.01	-.03	.08	-.10	.11	.05	.07	***.42***	.08	-.07	.00	*.19*	.01	*-.16*
Soli2	***.56***	*-.18*	.03	.05	.02	-.01	.01	.08	-.01	-.14	-.08	.08	***.65***	*-.16*	*.16*	-.09	.01	.00	.09
Soli4	***.63***	*-.16*	.02	-.05	-.10	*-.23*	.03	.11	*.22*	.07	.07	-.07	***.21***	.16	-.10	.05	-.01	.10	.06
Soli5	***.56***	.17	.12	-.03	-.16	.01	-.11	*-.29*	.03	.00	-.13	.01	***.26***	.14	-.12	.10	.03	-.04	-.03

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 15 (continued)

Standardized Factor Loadings (λ) for LSA 18-Factor Bifactor ESEM in Full Survey Sample 2

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
13.StPl																			
StPl1	***.68***	-.05	-.03	.01	.02	-.13	.01	.11	.14	.04	.00	.03	.02	**-.15**	.08	-.12	-.04	-.01	*-.23*
StPl3	***.73***	.09	*.15*	.03	-.12	-.02	.01	-.04	.09	.02	-.08	-.05	.06	***-.34***	.00	.01	-.03	-.01	-.08
StPl7	***.68***	-.04	.04	-.02	*-.17*	-.01	.00	.06	.00	.14	-.09	*-.14*	.00	**.17**	.04	-.13	*-.19*	-.02	-.01
StPl8	***.63***	.06	.12	.07	-.10	-.02	.02	.06	.06	-.07	*-.15*	-.02	.03	***.29***	.05	.12	*-.17*	.04	-.09
StPl9	***.73***	-.12	.05	.03	-.02	.01	-.11	-.04	.04	*.24*	.10	.03	.06	**.12**	*.19*	-.07	*-.14*	.08	-.07
14.Supe																			
Supe1	***.69***	-.08	-.06	-.05	-.02	-.07	.07	-.10	*-.18*	-.04	-.03	-.09	-.07	.05	**.12**	*-.15*	*.15*	-.06	.04
Supe3	***.66***	*-.17*	*-.14*	-.10	.07	.03	-.03	.00	*-.13*	-.08	.05	.06	*-.10*	.06	***.32***	*-.16*	.10	-.01	-.01
Supe6	***.69***	.13	-.01	-.10	.08	*-.17*	-.13	-.02	.07	.03	-.07	-.07	-.02	-.01	***.23***	.08	.07	*-.19*	-.04
Supe2	***.67***	.05	.02	-.04	.01	-.06	.08	.08	.08	.06	.09	-.05	-.01	.05	***.52***	.07	.03	.08	-.02
Supe5	***.67***	.09	.10	.00	-.03	.02	.00	.04	.03	-.01	-.04	*-.20*	.10	-.06	***.23***	.07	-.02	-.01	-.02
15.TDev																			
TDev2	***.56***	.09	.07	*-.18*	.22	.10	*-.16*	-.09	-.01	-.01	-.07	-.07	-.02	-.10	-.05	**.24**	*.15*	-.06	*.15*
TDev4	***.62***	-.04	*.14*	-.09	.09	-.03	*.15*	-.05	.03	-.10	*.10*	.08	.03	-.07	-.04	***.37***	*-.12*	.04	.07
TDev6	***.63***	*-.13*	.13	.08	.08	.09	.10	.00	*-.15*	.10	.08	.05	.11	-.01	.12	***.24***	.07	-.02	.09
TDev1	***.68***	-.12	-.09	*-.12*	-.08	-.11	.07	-.16	*-.15*	.12	.03	*.18*	-.05	.09	.04	***.22***	-.09	.04	*.18*
TDev7	***.65***	.10	-.08	.02	-.10	.00	-.11	.14	-.10	-.17	-.10	-.10	-.04	.14	-.03	***.35***	-.05	.08	-.13
16.Tran																			
Tran6	***.68***	-.09	-.07	.10	.13	*-.22*	.04	.11	.02	.12	*-.15*	.05	-.04	-.06	-.02	-.01	***.18***	.04	-.14
Tran4	***.67***	.02	.09	.10	*-.14*	-.04	*.14*	-.06	-.01	-.01	-.02	.00	*.13*	*-.13*	*.16*	.09	***.43***	-.10	-.08
Tran2	***.66***	-.02	-.13	*-.15*	.04	.03	-.07	.08	*.11*	.02	-.03	-.03	.09	.04	-.04	-.13	***.39***	.10	.09
Tran3	***.77***	-.08	.08	.08	-.05	-.07	-.12	-.02	.06	.07	.00	.05	.00	-.07	*.15*	-.11	***.22***	.05	*.13*
Tran1	***.67***	-.05	-.08	.09	.04	.06	.07	.10	.00	*-.16*	.02	*-.15*	.09	-.06	.00	.02	***.28***	.06	-.04

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 15 (continued)

Standardized Factor Loadings (λ) for LSA 18-Factor Bifactor ESEM in Full Survey Sample 2

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
17.ValC																			
ValC5	***.64***	*.12*	.04	*-.10*	-.08	-.12	*.14*	.08	-.07	.03	.07	.03	.02	-.10	.02	-.08	.08	***.34***	-.04
ValC3	***.66***	*-.16*	-.02	*-.14*	.11	-.01	*.13*	.05	.03	.07	-.07	.10	*-.11*	-.08	*-.22*	.07	-.02	**.18**	-.06
ValC2	***.66***	-.11	.07	-.04	.05	.04	-.02	-.05	-.02	-.06	-.06	-.06	.06	.13	.10	*.15*	.00	***.19***	*.17*
ValC4	***.72***	*.17*	.06	-.12	.01	.00	*-.12*	-.09	.06	.07	.05	.12	-.07	.13	-.03	-.03	*.15*	***.30***	-.04
ValC6	***.71***	.00	-.12	-.07	-.05	-.03	.03	.04	*-.12*	-.02	*-.24*	-.06	.05	.04	.03	.10	*-.13*	***.28***	.02
18.WCon																			
WCon3	***.56***	.11	-.06	*-.18*	.18	.03	.09	-.05	-.03	-.05	*.21*	-.01	.06	-.07	-.03	*.18*	*-.14*	.02	***.29***
WCon1	***.55***	.06	*.32*	-.07	-.12	.03	.03	-.02	-.06	.04	*.16*	-.09	-.01	-.07	-.01	*.19*	.00	-.01	***.38***
WCon5	***.59***	*.12*	.01	-.02	.02	.01	-.02	.10	-.09	.00	.09	.02	*-.10*	.07	.06	-.01	.08	.00	***.47***
WCon2	***.65***	-.03	*-.17*	.01	.04	.01	-.13	*.23*	.00	.02	.07	.03	.10	.14	.09	.06	*.18*	-.14	**.12**
WCon7	***.63***	-.06	-.03	.08	.01	-.03	-.05	*-.15*	-.01	-.08	*.16*	-.03	.05	.05	-.12	-.10	-.06	.03	***.48***

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 16

Standardized Factor Loadings (λ) for LSA 18-Factor Bifactor ESEM in Reduced Survey Sample 2

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1.AbUt																			
AbUt1	***.63***	**.11**	.07	-.06	.03	-.14	-.03	.01	*-.22*	.05	.06	-.14	-.09	-.11	-.01	.02	*-.29*	*-.14*	.24
AbUt4	***.58***	***.45***	-.02	-.01	*-.17*	-.12	-.13	-.10	.07	.05	*.24*	.15	.05	-.05	*.17*	.00	-.07	-.10	-.03
AbUt2	***.67***	***.27***	*-.22*	.03	.08	-.04	.15	.12	.05	.02	-.10	-.10	.05	-.11	-.04	-.10	-.10	*.16*	.14
AbUt6	***.58***	***.36***	.03	-.02	.03	.10	.08	.08	.01	-.05	-.15	*.20*	-.06	.06	-.02	.05	-.06	.13	.12
AbUt7	***.64***	***.47***	.06	.04	*.14*	.10	.01	-.08	*-.17*	-.07	-.04	.09	-.02	.05	-.09	-.09	.05	-.04	.07
2.Auto																			
Auto5	***.58***	.07	**.21**	*-.31*	-.05	-.01	-.07	-.07	-.12	.15	.08	-.05	.05	-.01	.02	-.05	.00	-.08	-.01
Auto2	***.64***	.00	**.29**	*-.15*	.06	-.08	.15	.22	.01	.06	.02	.12	*-.16*	.07	-.07	.13	-.17	-.05	.15
Auto4	***.67***	-.04	**.01**	-.11	-.07	*.13*	.03	.08	-.07	-.01	-.03	-.02	-.08	.03	-.24	-.02	.06	-.01	.03
Auto1	***.65***	.01	***.43***	-.09	-.06	.00	.06	-.01	-.04	-.02	.08	.13	.08	.14	.04	.00	-.05	.10	.12
Auto6	***.62***	*.23*	**-.19**	-.10	-.13	-.03	.14	-.04	*-.25*	-.13	.00	.02	-.11	.29	.12	-.08	.01	*.14*	.13
3.Comp																			
Comp1	***.57***	.00	-.13	***.40***	*-.15*	.00	.10	-.11	*.12*	.08	.05	-.06	.00	-.11	*-.27*	-.07	.05	-.10	-.04
Comp3	***.65***	-.02	-.15	***.42***	*-.15*	-.03	.05	-.05	*.12*	-.04	-.09	.03	.00	-.02	-.01	*-.17*	.09	.00	-.11
Comp6	***.66***	-.01	-.02	***.51***	-.04	.00	-.07	.08	*.16*	.08	.11	.04	.05	.06	.09	.01	-.01	-.06	.06
Comp2	***.67***	.04	.02	***.61***	.06	.06	.03	.02	*.14*	.05	.10	-.04	.01	.09	-.03	-.03	-.06	-.04	-.01
Comp7	***.72***	-.02	-.09	***.20***	*-.17*	-.07	-.09	.02	*.22*	.12	.07	.08	.09	.08	.02	.03	-.09	-.08	-.07
4.CoWo																			
CoWo5	***.52***	.09	.03	*-.27*	**.13**	*.27*	.04	.00	-.10	.06	.03	*.16*	-.08	-.20	.15	.19	*-.18*	.12	.15
CoWo1	***.61***	.04	-.07	*-.22*	**.07**	-.10	-.08	.00	-.10	.03	*-.16*	-.01	.04	-.17	-.01	*.30*	-.02	.03	.07
CoWo6	***.57***	*-.18*	*.18*	-.12	***.25***	.10	.01	.00	*-.15*	-.01	.08	-.01	.02	-.10	-.08	*.29*	.13	-.02	*.14*
CoWo2	***.59***	.14	-.01	-.10	***.45***	.13	-.01	.08	*-.23*	-.07	-.05	.07	-.04	.00	.00	-.01	.07	*.11*	.13
CoWo7	***.63***	-.02	-.08	-.04	***.43***	*-.17*	-.03	-.06	.01	-.08	-.03	-.04	.01	.19	.07	.06	-.06	.11	.03

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 16 (continued)

Standardized Factor Loadings (λ) for LSA 18-Factor Bifactor ESEM in Reduced Survey Sample 2

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
5.Ment																			
Ment3	***.58***	-.02	.12	*-.20*	-.02	***.29***	-.07	-.05	.02	.13	.04	.05	-.02	.08	*-.14*	.09	-.01	*-.18*	-.03
Ment2	***.72***	.01	-.03	.02	-.15	**.13**	-.12	.01	.07	-.01	-.05	.01	.01	-.07	.08	-.13	*-.33*	.01	-.11
Ment1	***.60***	.11	-.08	.12	.02	***.41***	-.03	.06	.04	-.02	-.10	-.01	.06	-.07	-.08	.14	-.04	.13	-.04
Ment5	***.70***	-.09	-.04	.05	*.21*	**.22**	.15	-.04	.06	.03	-.07	*.14*	-.03	.08	.12	.02	-.01	-.13	*.15*
Ment4	***.71***	*-.16*	-.07	.04	.11	**.11**	-.13	-.02	-.04	-.03	-.05	.14	.02	-.03	-.13	-.17	-.02	.06	.10
6.PAch																			
PAch4	***.63***	.07	.15	*.15*	.07	*-.16*	**.22**	-.08	*.30*	.14	-.09	-.01	-.13	-.12	.08	-.08	-.03	.05	-.04
PAch2	***.62***	-.07	.03	.02	-.08	.05	***.43***	-.03	.08	-.09	*.20*	.05	-.03	-.07	.10	.07	.04	-.05	-.10
PAch5	***.73***	.06	-.02	.04	.02	-.11	**.22**	.12	-.04	.11	.03	.11	-.10	-.13	-.05	*-.22*	.18	.02	.00
PAch1	***.75***	.10	-.01	.02	-.11	.02	**.10**	-.09	*.18*	.13	-.04	.01	.05	*.31*	-.13	*.15*	.01	-.07	-.03
PAch7	***.66***	.03	.11	*.22*	-.11	-.05	**-.12**	.04	*.34*	-.13	-.04	-.03	-.09	-.05	.03	*-.19*	.04	*-.18*	-.03
7.Poli																			
Poli5	***.57***	-.05	.01	*-.15*	-.06	.11	-.03	**.02**	.11	.01	*.22*	*-.16*	.09	-.10	.07	-.01	.25	.03	*-.33*
Poli3	***.71***	-.09	*.22*	-.02	-.02	.00	.01	**.30**	-.04	-.17	-.07	-.10	.04	-.06	.01	.07	.08	.01	-.20
Poli7	***.75***	-.10	-.18	-.02	.04	.00	*-.17*	**-.15**	-.04	-.12	.04	-.12	-.08	.07	.02	-.07	.09	.10	-.10
Poli8	***.68***	-.05	-.12	-.01	.09	-.05	*-.20*	**.26**	-.05	.13	-.01	.00	-.05	.08	-.08	.03	.01	.06	-.13
Poli9	***.70***	.08	-.08	.06	.01	.13	.05	**.08**	-.06	-.11	.06	-.03	.06	.19	-.13	.08	*.22*	-.03	-.12
8.Prom																			
Prom2	***.60***	.01	.01	*.16*	-.12	.03	.12	-.19	***.43***	-.10	-.15	-.01	*-.12*	*-.20*	.02	.01	-.01	-.06	-.06
Prom6	***.70***	*.19*	*-.15*	.09	-.06	-.01	.06	-.04	***.37***	.05	*.18*	.05	-.03	.10	.01	*-.12*	.03	*-.12*	*-.15*
Prom4	***.66***	-.10	*.17*	.05	-.13	.05	-.14	-.01	***.54***	-.09	-.02	.02	*.11*	.04	.03	-.10	*.14*	-.01	-.01
Prom5	***.71***	*-.19*	.11	*.18*	-.04	.03	*.24*	.10	***.40***	-.07	.01	-.06	.00	.04	.00	-.04	.03	-.03	.05
Prom7	***.63***	.00	*-.17*	*.24*	.01	-.02	-.06	.10	***.45***	.10	.09	*.16*	-.11	.04	-.10	-.02	-.02	-.05	.01

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 16 (continued)

Standardized Factor Loadings (λ) for LSA 18-Factor Bifactor ESEM in Reduced Survey Sample 2

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
9.Reco																			
Reco3	***.76***	.09	.10	-.04	-.05	-.12	-.06	.04	-.02	***.30***	-.06	*-.18*	.04	.03	.02	.07	-.01	-.09	-.07
Reco1	***.76***	-.01	.06	.09	-.06	.06	.10	.04	.03	***.33***	.01	*-.16*	.04	-.03	.04	-.10	-.09	.19	-.02
Reco2	***.77***	-.08	.10	*.13*	-.06	-.04	.11	-.14	*-.17*	**.26**	.01	-.03	.08	.09	-.09	*-.14*	.03	*-.10*	-.15
Reco4	***.77***	-.06	-.03	*.20*	-.04	*.19*	-.02	.01	-.06	***.32***	.01	*.11*	*-.13*	.05	-.02	.00	.04	-.04	.07
Reco5	***.71***	.05	.04	.10	-.09	*.21*	*-.25*	-.06	.06	**-.05**	-.10	.04	*-.15*	.15	*.18*	-.11	.04	-.09	.03
10.Secu																			
Secu4	***.59***	-.07	-.08	.03	-.01	.17	.00	-.17	.01	-.04	***.60***	-.11	-.02	.00	.07	-.10	-.07	-.07	.05
Secu5	***.57***	.03	.11	-.05	.01	-.08	.03	.00	.00	-.09	***.57***	*.10*	-.05	.04	.07	.01	.01	*-.16*	.08
Secu1	***.65***	*.13*	-.11	*.11*	-.01	-.05	.02	.07	.05	.12	***.41***	-.10	.03	-.04	.07	*.15*	-.07	-.02	*.22*
Secu3	***.61***	-.08	.21	.04	-.05	*-.25*	.10	.18	-.08	-.07	***.38***	*-.16*	-.04	.04	-.09	-.06	-.12	-.07	.08
Secu2	***.65***	.05	.02	*.18*	.02	.01	.03	-.04	.11	*.15*	***.36***	-.01	-.03	-.20	-.05	.04	.14	*.29*	*.21*
11.Serv																			
Serv4	***.59***	.11	.02	-.07	*-.14*	*-.18*	.03	.04	.06	-.05	*-.10*	***.45***	-.08	-.10	-.10	.03	.05	.04	-.05
Serv5	***.58***	.13	*.21*	.03	-.11	*.21*	.01	.09	-.03	-.08	*-.14*	***.29***	.09	-.13	-.02	.11	-.10	*.14*	-.19
Serv6	***.57***	.10	.08	*.17*	.02	-.14	-.03	-.10	.03	-.18	-.09	***.36***	-.08	-.09	.08	*.22*	-.04	-.02	.05
Serv2	***.52***	.06	.03	-.01	*.14*	.15	-.04	-.10	*.11*	.09	.03	***.56***	.09	.14	.01	-.04	.03	.00	.03
Serv3	***.63***	-.05	-.09	-.07	.10	.11	.16	.08	-.06	-.04	-.04	***.41***	*.23*	-.04	*-.26*	-.13	-.08	-.02	-.05
12.Soli																			
Soli1	***.52***	*.20*	.11	*.13*	.11	.24	.02	-.14	-.06	.09	-.04	.09	***.39***	-.15	.01	.14	.04	.00	-.01
Soli6	***.51***	.02	-.09	.02	.03	.02	-.06	-.02	-.09	.09	.03	.06	***.51***	-.07	-.01	*-.13*	*.16*	-.04	-.07
Soli2	***.56***	*-.14*	-.08	-.04	*-.17*	-.03	.01	.15	-.03	-.11	-.04	.01	***.59***	.00	-.05	.04	.11	.04	.01
Soli4	***.63***	*-.20*	.01	-.06	-.05	-.18	-.08	-.17	*.17*	.01	.09	-.02	***.27***	.17	-.07	-.05	.02	.11	.13
Soli5	***.53***	.15	*.23*	.10	*.18*	-.07	-.04	.13	-.04	-.03	*-.21*	.14	***.28***	.14	.07	.05	-.10	*-.20*	.06

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 16 (continued)

Standardized Factor Loadings (λ) for LSA 18-Factor Bifactor ESEM in Reduced Survey Sample 2

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
13.StPl																			
StPl1	***.65***	.02	-.09	-.10	-.08	.00	-.03	.08	*.22*	-.03	-.02	-.02	.09	**-.01**	.06	-.13	-.01	-.03	*-.27*
StPl3	***.70***	*.13*	.15	.10	-.07	.08	.18	.17	.01	-.08	.00	-.05	.14	**.08**	-.04	.06	.03	-.02	-.18
StPl7	***.69***	-.01	.08	-.01	.05	-.04	-.13	-.10	.03	.11	-.02	*-.19*	-.06	**.35**	-.04	-.11	-.06	.02	-.10
StPl8	***.63***	-.02	-.06	*.13*	.01	-.02	-.06	.08	-.04	-.08	*-.15*	.10	-.02	**.29**	.14	.12	-.23	.08	-.04
StPl9	***.77***	-.14	.02	.00	.02	.09	.01	.05	.06	.14	-.01	-.06	.03	**.12**	*.16*	*-.18*	-.10	.05	-.02
14.Supe																			
Supe1	***.69***	-.05	.07	-.04	.11	-.17	.05	-.11	-.07	.02	-.06	-.08	-.11	-.05	**.22**	.07	.15	-.07	-.11
Supe3	***.69***	-.10	.00	-.12	.04	.04	-.01	-.05	-.10	-.07	.03	-.11	-.07	*-.25*	**.31**	-.12	.06	.00	-.08
Supe6	***.69***	.02	-.01	-.04	-.08	-.04	-.08	-.04	.03	.03	-.04	-.04	.07	.08	***.50***	.05	.04	-.09	.07
Supe2	***.69***	.03	-.11	-.05	.04	.01	*.16*	.03	.03	-.03	*.16*	-.03	-.07	.12	***.44***	-.03	.03	*.15*	-.04
Supe5	***.69***	*.19*	.07	.05	.06	-.05	-.02	.07	.00	-.01	.09	*-.21*	.05	.20	**.19**	.10	.10	*.15*	-.10
15.TDev																			
TDev2	***.58***	.05	*.13*	*-.14*	-.05	.10	-.11	.05	-.04	-.02	*-.13*	-.02	-.04	-.09	.01	***.46***	.10	-.02	*.29*
TDev4	***.64***	-.03	.04	*-.13*	.09	-.06	.17	.05	.00	-.03	*.16*	*.10*	.02	.01	-.05	***.38***	-.08	.06	.10
TDev6	***.66***	-.10	-.02	.05	.12	*.15*	.12	.07	*-.18*	.00	.03	.00	.09	-.05	.04	***.26***	.09	-.02	.07
TDev1	***.70***	*-.17*	.07	-.07	*.31*	-.02	-.03	-.03	-.10	.09	.06	.11	.04	.01	.04	***.24***	-.13	.09	.13
TDev7	***.64***	.02	*-.24*	.07	.14	-.02	-.18	-.02	*-.20*	*-.25*	-.11	-.03	-.03	.16	.01	**.18**	-.06	-.01	-.08
16.Tran																			
Tran6	***.70***	-.09	-.26	-.02	.00	-.08	-.04	.02	.05	*.22*	-.08	.01	.05	-.15	.07	-.02	**.13**	-.07	-.18
Tran4	***.66***	-.03	.09	.06	.07	-.02	.12	.13	.02	-.12	.02	.02	*.11*	.05	.17	.01	***.53***	-.08	-.05
Tran2	***.70***	-.06	-.09	-.06	.00	-.08	-.14	-.05	*.12*	.15	-.11	.04	*.12*	-.19	.03	.00	***.39***	.11	.04
Tran3	***.79***	-.09	-.08	.02	.07	.01	.09	.12	.10	.01	-.05	-.02	.04	-.07	.07	-.08	**.24**	-.05	.16
Tran1	***.69***	-.03	-.08	-.03	-.10	-.06	.06	-.13	.01	-.12	-.02	*-.19*	.07	-.05	-.07	.04	**.34**	.04	-.02

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

Table 16 (continued)

Standardized Factor Loadings (λ) for LSA 18-Factor Bifactor ESEM in Reduced Survey Sample 2

Items	G	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
17.ValC																			
ValC5	***.62***	*.14*	-.14	*-.20*	.06	-.05	*.16*	.03	-.08	-.03	.11	.01	-.03	-.01	-.05	-.11	.11	***.33***	-.12
ValC3	***.68***	-.13	.10	-.09	-.02	-.01	.08	-.15	.01	.04	-.09	.13	*-.12*	-.06	-.22	.10	-.01	**.17**	-.13
ValC2	***.64***	-.15	.10	-.01	-.01	-.08	.05	.01	-.07	.05	-.07	.04	.01	.11	*.19*	.13	.00	***.40***	*.22*
ValC4	***.72***	.12	-.03	-.03	.12	-.08	-.05	.18	.01	.16	-.04	*.20*	-.08	-.08	.11	-.09	.01	**.21**	.10
ValC6	***.70***	.04	-.05	-.04	*.16*	.12	*-.16*	-.05	*-.13*	-.11	-.12	*-.11*	.06	.06	-.02	.03	-.09	***.42***	-.07
18.WCon																			
WCon3	***.50***	.07	.03	-.12	.06	.07	.04	-.12	.01	.01	*.27*	-.03	.08	-.10	-.02	*.26*	-.16	.06	**.31**
WCon1	***.52***	.16	.27	-.04	.11	.11	-.05	.20	-.12	-.09	.20	-.08	-.05	.12	-.02	.11	.10	.02	**.53**
WCon5	***.60***	.05	-.19	*-.10*	.00	.00	.02	-.10	-.08	.02	.05	.01	-.08	-.06	.05	.07	-.01	-.04	***.53***
WCon2	***.66***	-.13	-.06	*.14*	*-.21*	.07	*-.23*	*-.24*	-.15	-.02	.14	.14	*.13*	-.06	.13	.05	.26	.02	**.17**
WCon7	***.62***	.02	.06	.07	*.19*	*-.18*	-.02	-.15	.14	-.01	.06	-.09	.08	-.09	-.17	.03	-.10	.02	***.48***

Note. Bolding denotes item loading on its target factor. Italics denotes a significant factor loading at $p < .05$. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, Supe = Supervision, StPl = Strategic Planning, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions

8.2.5.3 Concurrent Validity

Zero-order correlations between the LSA-Extended, MOAQ, and MSQ were computed to evaluate the concurrent validity of the LSA (see Table 17). As was found in Survey Sample 1, the global scale of the LSA was found to be moderately correlated with the MOAQ (r_{full} = .42; $r_{reduced}$ = .52). In the full sample, the magnitude of the correlations between LSA facets and their MSQ counterparts (M_r = .70, Min_r = .54, Max_r = .83) was again found to be larger than the magnitude of the correlations between novel facets of the LSA and the MSQ (M_r = .58, Min_r = .27, Max_r = .70). The same pattern of results emerged in the reduced sample when comparing the magnitude between matched scales ($\bar{r}$ = .73, r_{min} = .57, r_{max} = .85) to the magnitude of relations of novel facets with MSQ facets ($\bar{r}$ = .59, r_{min} = .27, r_{max} = .74).

Table 17

Concurrent Validity between the LSA, MOAQ, and MSQ in Full Survey Sample 2 (N = 240)

		MSQ																			
LSA	**MOAQ**	Ab	Ac	At	Ad	Ah	CP	Cm	CW	Cr	In	MV	Rc	Rs	Sc	Sr	SS	SH	ST	Vr	WC
G	.42	.52	.47	.45	.44	.45	.49	.41	.40	.51	.38	.26	.48	.52	.42	.41	.41	.46	.48	.49	.44
AbUt	.43	**.71**	.66	.57	.56	.65	.51	.57	.57	.63	.57	.46	.61	.70	.55	.65	.53	.58	.59	.63	.59
Auto	.42	.67	.64	.58	.55	**.62**	.59	.51	.57	.67	.57	.52	.64	**.71**	.58	.62	.55	.62	.63	.62	.64
Comp	.31	.54	.57	.60	.79	.58	.58	**.83**	.44	.63	.50	.26	.66	.63	.66	.59	.64	.55	.61	.63	.50
CoWo	.39	.61	.61	.55	.41	.59	.58	.44	**.68**	.52	.40	.50	.56	.62	.50	.56	.46	.59	.61	.57	.64
Ment	.27	.60	.61	.55	.62	.64	.57	.62	.52	.61	.56	.49	.61	.67	.59	.64	.62	.55	.60	.60	.60
PAch	.38	.67	**.67**	.60	.77	.58	.63	.72	.55	.68	.52	.36	.70	.68	.63	.65	.63	.66	.68	.70	.54
Poli	.27	.60	.63	.56	.65	.60	**.67**	.62	.55	.59	.52	.50	.65	.66	.60	.58	.63	.68	.71	.64	.57
Prom	.29	.59	.60	.53	**.82**	.55	.56	.76	.46	.60	.45	.28	.65	.58	.64	.56	.64	.62	.63	.63	.47
Reco	.39	.68	.66	.59	.74	.64	.68	.74	.56	.70	.57	.45	**.76**	.70	.70	.63	.63	.72	.74	.65	.60
Secu	.35	.55	.59	.49	.60	.56	.59	.58	.53	.50	.43	.38	.58	.63	**.77**	.55	.51	.58	.65	.49	.57
Serv	.29	.62	.61	.55	.53	.57	.45	.55	.51	.59	.52	.38	.54	.65	.49	**.64**	**.61**	.51	.54	.61	.54
Soli	.20	.54	.56	.52	.50	.54	.52	.53	.47	.57	**.64**	.39	.50	.62	.53	.58	.52	.53	.55	.58	.56
StPl	.28	.66	.66	.55	.69	.62	.68	.66	.56	.70	.55	.44	.70	.68	.65	.66	.63	.70	.70	.62	.57
Supe	.43	.64	.63	.49	.59	.55	.69	.55	.58	.59	.46	.43	.71	.65	.62	.53	.50	**.80**	**.75**	.54	.64
TDev	.31	.66	.63	.53	.50	.60	.55	.49	.67	.52	.46	.51	.56	.64	.57	.59	.48	.63	.64	.52	.69
Tran	.33	.55	.60	.49	.66	.55	.67	.60	.56	.57	.49	.41	.68	.63	.62	.57	.59	.69	.70	.61	.59
ValC	.31	.61	.62	.54	.59	.62	.64	.52	.60	.59	.57	**.54**	.65	.66	.60	.63	.55	.67	.66	.59	.63
WCon	.39	.62	.63	.54	.53	.63	.54	.49	.62	.50	.46	.48	.56	.64	.68	.54	.45	.60	.63	.49	**.69**

Note. All correlations were significant at $p < .001$. Bolding denotes relations where a high degree of overlap was expected, as outlined in hypothesis 3a. G = Global job satisfaction, AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions, Ab = Ability Utilization, Ac = Achievement, At = Activity, Ad = Advancement, Ah = Authority, CP = Company Policies and Practices, Cm = Compensation, CW = Coworkers, Cr = Creativity, In = Independence, MV = Moral Values, Rc = Recognition, Rs = Responsibility, Sc = Security, Sr = Social Service, SS = Social Status, ST = Supervision-Technical, SH = Supervision-Human Relations, Vr = Variety, WC = Working Conditions.

Table 18

Concurrent Validity between the LSA, MOAQ, and MSQ in Reduced Survey Sample 2 (N = 163)

		MSQ																			
LSA	**MOAQ**	Ab	Ac	At	Ad	Ah	CP	Cm	CW	Cr	In	MV	Rc	Rs	Sc	Sr	SS	SH	ST	Vr	WC
G	.52	.53	.49	.45	.44	.46	.49	.42	.45	.51	.38	.30	.49	.54	.43	.42	.38	.52	.52	.50	.47
AbUt	.51	**.74**	.70	.59	.53	.66	.48	.54	.59	.67	.55	.46	.62	.74	.56	.56	.53	.59	.59	.64	.60
Auto	.46	.69	.69	.60	.52	**.64**	.59	.48	.62	.71	.58	.56	.65	**.72**	.58	.60	.55	.65	.65	.62	.67
Comp	.36	.53	.59	.63	.81	.58	.56	**.85**	.44	.62	.47	.23	.67	.62	.66	.56	.65	.55	.61	.61	.58
CoWo	.43	.63	.62	.52	.40	.58	.60	.39	**.74**	.51	.39	.54	.54	.62	.50	.55	.44	.63	.65	.55	.65
Ment	.27	.61	.63	.57	.62	.66	.55	.62	.54	.64	.56	.51	.62	.67	.59	.65	.62	.57	.61	.59	.63
PAch	.48	.67	**.71**	.60	.79	.59	.61	.71	.58	.70	.50	.32	.72	.70	.64	.67	.64	.69	.69	.70	.55
Poli	.30	.62	.68	.59	.65	.61	**.72**	.60	.60	.61	.54	.51	.67	.67	.61	.57	.64	.73	.75	.64	.62
Prom	.37	.57	.60	.53	**.85**	.55	.55	.77	.44	.59	.41	.25	.64	.58	.65	.54	.65	.63	.64	.62	.45
Reco	.45	.67	.67	.59	.73	.63	.69	.73	.57	.72	.57	.44	**.76**	.70	.69	.61	.63	.75	.75	.65	.59
Secu	.38	.55	.63	.52	.62	.55	.59	.57	.53	.50	.43	.41	.60	.66	**.82**	.52	.52	.60	.66	.49	.59
Serv	.34	.63	.62	.55	.51	.59	.43	.51	.52	.60	.50	.39	.54	.65	.46	**.65**	**.59**	.51	.53	.61	.52
Soli	.19	.54	.58	.54	.50	.54	.53	.51	.49	.58	**.67**	.38	.48	.62	.54	.58	.53	.55	.54	.58	.56
StPl	.33	.66	.68	.55	.69	.62	.69	.65	,58	.72	.55	.45	.72	.69	.65	.64	.62	.71	.71	.61	.57
Supe	.50	.64	.64	.50	.60	.55	.71	.53	.59	.60	.46	.44	.74	.67	.62	.51	.48	**.83**	**.76**	.53	.64
TDev	.36	.69	.68	.55	.47	.62	.56	.47	.74	.52	.48	.54	.57	.66	.59	.60	.50	.66	.67	.54	.74
Tran	.39	.54	.63	.50	.55	.56	.67	.57	.60	.57	.47	.39	.68	.63	.61	.53	.58	.72	.72	.59	.60
ValC	.35	.60	.65	.54	.57	.62	.65	.48	.65	.61	.55	**.57**	.63	.68	.61	.63	.54	.69	.67	.58	.63
WCon	.42	.61	.63	.55	.51	.63	.53	.45	.64	.51	.46	.50	.54	.65	.69	.50	.43	.60	.63	.46	**.73**

Note. All correlations were significant at $p < .001$. Bolding denotes relations where a high degree of overlap was expected, as outlined in hypothesis 3a. G = Global job satisfaction, AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions, Ab = Ability Utilization, Ac = Achievement, At = Activity, Ad = Advancement, Ah = Authority, CP = Company Policies and Practices, Cm = Compensation, CW = Coworkers, Cr = Creativity, In = Independence, MV = Moral Values, Rc = Recognition, Rs = Responsibility, Sc = Security, Sr = Social Service, SS = Social Status, ST = Supervision-Technical, SH = Supervision-Human Relations, Vr = Variety, WC = Working Conditions.

Chapter 9

9. Study 3: Validation of the Leader Satisfaction Assessment

The purpose of the final phase of analyses was to evaluate key aspects of construct and criterion validity for the LSA. This was done by examining the relation between the LSA-Extended and various constructs within the nomological network surrounding job satisfaction. These constructs included personality, core self-evaluations, cognitive ability, emotional intelligence, workplace behaviour, organizational commitment, and turnover intentions.

Because self-reports were obtained for each of the constructs measured in the present study it was important to address potential bias in the results due to common method variance (CMV). In particular, CMV can be of concern when evaluating the validity of a new measure, as inflated correlations with relevant criterion measures may seem to overstate the relation between variables. There is the risk that this could be interpreted as evidence of the novel measure's superiority over existing scales in the literature, when in fact it is an artifact of the methods of administration.

Following the recommendations of Podsakoff, MacKenzie, and Podsakoff (2012) a number of procedural and statistical methods were applied to account for the reliance of self-reports in the present study. Details on the procedural remedies that were adopted can be found in Section 9.3, while a description of the statistical techniques can be found in Section 9.4.1.

9.1 Participants

Participants in the validation of the LSA consisted of those leaders described in Survey Sample 2 from Chapter 8. Data for the refinement and validation of the LSA were collected concurrently, in the same study session.

9.2 Measures

In addition to the materials described in Section 8.2.2, leaders also completed the following measures.

9.2.1 Personality

The 60-item version of the HEXACO Personality Inventory – Revised was administered to assess six dimensions of personality: Honesty-Humility, Emotionality, Extraversion, Agreeableness, Conscientiousness, and Openness to Experience (Ashton & Lee, 2009). Participants are asked to rate the degree to which they agree with each statement using a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). Ashton and Lee reported internal consistency estimates of $\alpha = 0.76$ to 0.80 for each dimension of personality.

9.2.2 Self-Esteem

The Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965) is a widely popular, concise measure of self-esteem. It contains 10 items and respondents are asked to rate their level of agreement with each statement using a four-point Likert scale (1 = *strongly disagree* to 4 = *strongly agree*). Meta-analytic findings support the unidimensional nature of the RSES (Huang & Dong, 2012).

9.2.3 Self-Efficacy

The Self-Efficacy Scale (SES) was developed by Sherer and Maddux (1982). The scale assesses both generalized self-efficacy and social self-efficacy. Only the generalized subscale was administered in this study. The generalized SES contains 17 items and responses are provided on a 14-point Likert scale ranging from strongly disagree to strongly agree. Test developers reported an internal consistency coefficient of .86 for the generalized subscale, and demonstrated expected relations between

generalized SES and self-esteem, locus of control, ego strength, and interpersonal competence (Sherer & Maddux).

9.2.4 Locus of Control

Rotter's (1966) control scale is arguable one of the most frequently-used assessments of locus of control. The scale contains 23 forced-choice items. Participants are asked to indicate which of two statements they more strongly believe. In each pair, one statement is written to reflect an internal locus of control and the second statement an external locus of control. Responses are scored across items such that high scores reflect an external locus, whereas low scores reflect an internal locus. Rotter reported evidence of high internal consistency estimates using both Spearman-Brown and Kuder-Richardson formulas. Relatively high stability in responding was also found at one and two month follow-ups. In addition, weak-to-moderate correlations were observed with the Marlowe-Crowne social desirability scale.

9.2.5 Cognitive Ability

The International Cognitive Ability Resource (ICAR) is a public-domain assessment of cognitive abilities. The 16-item ICAR (Condon & Revelle, 2014) sample test was administered, which contains verbal reasoning, letter and number series, matrix reasoning, and three-dimensional rotation items. An additional seven items were also administered from the ICAR item pool. All 23 items were administered in increasing order of difficulty.

9.2.6 Emotional Intelligence

A revised version of the Multidimensional Emotional Intelligence Assessment – Workplace (MEIA-W) (Tett, Wang, & Fox, 2006) was administered to assess trait-based EI. The MEIA-W measures individuals' tendency to engage in behaviours related to 10

dimensions of EI, specifically within a work context: Recognition of Emotions in the Self, Regulation of Emotions in the Self, Recognition of Emotions in Others, Regulation of Emotions in Others, Nonverbal Emotional Expression, Empathy, Intuition versus Reason, Creative Thinking, Mood Redirected Attention, and Motivating Emotions. A revised, 78-item version of the MEIA-W was administered, in which participants were asked to rate their level of agreement to statements using a six-point Likert scale (1 = *strongly disagree* to 6 = *strongly agree*). The authors reported internal consistency estimates of .74 to .91 for the original dimensions of the MEIA-W (Tett, Wang, & Fox, 2006).

9.2.6.1 Ability-Based Emotional Intelligence

The Wong and Law Emotional Intelligence Scale (WLEIS) (Law, Wong, & Song, 2004) is a brief, 16-item measure of EI that was developed from an ability-based model of EI. Importantly, the WLEIS is a self-reported measure of EI rather than a performance-based ability measure. The WLEIS was specifically developed for use in management research. Individuals were asked to rate the extent to which they agreed with each statement using a seven-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (7). Sample items include "I have a good understanding of my own emotions" and "I really understand what I feel.".

9.2.7 Organizational Citizenship Behaviours

Williams and Anderson's (1991) model of OCB was used to assess individuals' tendencies to engage in extra-role behaviours targeted towards individuals (OCB-I) and the organization (OCB-O), using items developed by Smith, Organ, and Near (1983). This scale contains seven items assessing OCB-I and seven items assessing OCB-O. For the purposes of the present study, one item was modified slightly to refer to "others"

rather than “supervisors”. Since the present study recruited leaders, it was possible that some may not have a supervisor whom they directly work with on a regular basis, thereby limiting their ability to display behaviour towards this particular individual. Responses were provided on a five-point rating scale (1 = *highly uncharacteristic*; 5 = *highly characteristic*).

9.2.8 Counterproductive Workplace Behaviours

The frequency with which leaders engaged in CWBs at work was assessed using Bennett and Robinson’s (2000) measure of workplace deviance. This measure presents respondents with a list of 19 deviant workplace behaviours that vary in severity (i.e., “acted rudely toward someone at work” to “discussed confidential company information with an unauthorized person”). They are then asked to report the extent to which they have engaged in each of the behaviours over the past year, using a seven-point scale (1 = *never* to 7 = *daily*). Bennett and Robinson reported a two-factor structure within their measure of workplace deviance: organizational deviance and interpersonal deviance.

9.2.9 Organizational Commitment

The revised version of Allen and Meyer’s (1990) organizational commitment measure was administered. The revised scale (Meyer, Allen, & Smith, 1993) consists of three subscales: affective commitment scale (acs), continuance commitment scale (ccs), and normative commitment scale (ncs). Each subscale consists of six items, which ask participants to indicate their feelings toward their current organization. Responses are provided on a seven-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*). Meyer et al. reported internal consistency estimates ranging from $\alpha = .85$ to .87 for acs, $\alpha = .79$ to .83 for ccs, and $\alpha = .73$ to .77 for ncs.

9.2.10 Turnover Intentions

Participants were asked to report their intentions to leave their organization, their job, and their occupation. Intentions to leave each of these targets was assessed with three items ("I often think about leaving my current ____", "I am actively searching for an alternative to my current _____", and "As soon as it is possible, I plan to leave my current _____"). Responses were recorded on a five-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5).

9.2.11 Common Method Variance

The Aesthetic Appreciation scale of the Personality Research Form (PRF) (Jackson, 1984) was administered. This is an eight item measure of the degree to which individuals find meaning or beauty in art. Participants are asked to rate the degree to which they agree with statements such as "I am deeply moved by sunsets" and "I crave artistic experiences", using a five-point Likert scale (1 = *strongly disagree* to 5 = *strongly agree*). There was no reason to expect Aesthetic Appreciation to be meaningfully related to other constructs in this study, with the exception of the Openness scale of the HEXACO. As such, it was included to allow for the control of CMV (Williams & McGonagle, 2016).

9.3 Procedure

A description of the study procedures can be found in Chapter 8, Section 8.2.3. It is also important to note that following the recommendations of Podsakoff et al. (2012), a number of methodological design choices were made to ameliorate the effects of CMV due to the reliance on self-reported data.

First, careful consideration was given to the constructs that would be measured to investigate the validity of the LSA. In particular, only those constructs which are most

appropriately assessed by self-reports due to their self-referential nature were included in the study design. The use of constructs that are most at risk of being inflated when assessed via self-reports and which can be accurately measured by other raters (e.g., performance) was minimized (Lindell & Whitney, 2001). In addition, the ICAR was chosen, in part, because it was not vulnerable to CMV. As an assessment of cognitive ability that required knowledge of correct answers, there would be no reason to suspect that scores would be impacted by method bias.

Second, only those constructs within the nomological network of job satisfaction for which there were substantial documented empirical findings were included in the present study. Where possible, the most popular and highly-researched measures were selected for each of these constructs (e.g., RSES). Limiting analyses to these well-researched measures allowed for the nature of associations found in the present study to be compared to meta-analytic findings in the literature. As such, any deviations in the magnitude of relations between the present study and meta-analytic results could be taken as an indication of the potential impact of CMV.

Third, it has been argued that reducing similarities in scale properties can help to reduce the impact of CMV (Podsakoff et al., 2012). The present study leveraged measures that used a variety of response formats including Likert-type scales, forced choice, and multiple choice. In addition, those scales that used a Likert-style response scale varied in the number of response options (e.g., four to seven, nine, and 14) as well as the anchors that defined those response options (e.g., not satisfied-satisfied, disagree-agree, uncharacteristic-characteristic, and never-daily). Based on the findings of previous researchers, varying the types of scale formats used in the collection of self-report data

was likely to reduce the impact of CMV (Weijters, Cabooter, & Schillewaert, 2010; Flamer, 1983).

Last, all data in the present study were collected anonymously. As previously discussed in Section 8.1.2.3, this likely meant that there was little motivation for leaders to fake or respond dishonestly when completing the survey materials. As such, it was unlikely that social desirability bias would dramatically impact the results. Taken together, the implementation of these study design choices were likely to reduce the degree to which the data were vulnerable to CMV.

9.4 Data Analytic Plan

To situate the LSA within the nomological network of job satisfaction and to test the hypotheses outlined in Chapter 6, a series of zero-order correlations were computed. Moderation analyses to examine whether emotional intelligence moderated the relation between job satisfaction and workplace behaviours were conducted using the Hayes Process macro in SPSS Version 21 (Hayes, 2018).

Following the recommendations of Berinsky et al. (2014), all analyses were conducted at varying levels of attentiveness due to the issues of data unreliability described in Appendix E. In particular, results are reported for both the full and reduced samples. The full sample contained data from those leaders who provided correct answers to directed response items, had valid responses to open-ended questions, and who met the eligibility requirements for the study (N = 240). The reduced sample was made up of a subset of these leaders who also passed stricter data cleaning procedures. In particular, leaders in the reduced sample were found to meet a threshold of within-person responses consistency (N = 163).

Berinskey et al. (2014) noted that in such cases where data reliability is a concern, it can be useful to present results at multiple levels of attentiveness. In particular, analyses conducted with the reduced sample provide a psychometrically reliable test of the hypotheses. However, due to the fact that a large number of participants have been dropped, these reduced samples have the potential to over represent certain sample characteristics, thereby introducing bias into the results. In addition, the reduced sample size can leave some analyses underpowered. As such, presenting results within both the full and reduced samples and comparing how those results are similar or different from one another helps to balance concerns of both internal and external validity.

Despite the data cleaning procedures described in Appendix E, 13 scales for which hypotheses had been made were not included in the analyses conducted as part of this study. Scales dropped due to unreliability were locus of control, HEXACO personality, trait-based emotional intelligence measured by the MEIA-W, and social desirability measured by the BIMI. As such, there were several hypotheses and research questions that could not be tested (H5-6; RQ1-2), as well as some that could only be partially tested (H7, 9; RQ 3).

As discussed earlier in this chapter, CMV was a concern due to the self-reported nature of the data. In addition to the procedural steps that were taken to minimize the impact of CMV, statistical adjustments were also made. The initial plan was to test for CMV using Williams and McGonagle's (2016) multi-phase approach. This is a sort of hybrid method that combines unmeasured latent variables, marker variables, and measured cause variables using a CFA technique to compare the fit of increasingly constrained models to determine (1) if evidence of CMV exists, and if so (2) what the

cause of the CMV may be. In the present study, social desirability was planned for use to test for known method effects and Aesthetic Appreciation was to be used as a marker variable. However, since social desirability had to be dropped from analyses due to unreliability it was not possible to test for various sources of CMV using this approach.

Instead, the correlation-based marker variable technique described by Lindell and Whitney (2001) was used. This approach involves examining the relation between the substantive research variables and a marker variable which is theoretically unrelated to the variables of interest. The degree to which the marker variable correlates with the conceptually unrelated study variables is used as an estimate of the presence of CMV.

For the purposes of the present study, a modified version of the Aesthetic Appreciation scale was used as a marker variable[1]. First, the correlations between Aesthetic Appreciation and all substantive variables were examined. The smallest correlation between the marker variable and the substantive variables was determined and used as an estimate of the degree of method effects. Then, the zero-order correlations between all substantive variables were adjusted by this amount. The resulting values, which are referred to as partial correlations (Podsakoff et al., 2012), were tested for significance. Any correlations that remained statistically significant after the adjustment were interpreted as reflecting substantive relations between variables that could not be entirely attributed to CMV. Zero-order and CMV-adjusted correlations are presented below for both the full and reduced samples across all hypothesized relations.

---

[1] One reverse-coded item with poor inter-item correlations was dropped from the scale. This modification resulted in a Cronbach's α = .79 in the full sample and α = .82 in the reduced sample.

In general, results obtained using the full sample are interpreted below. This decision was made so that interpretations were based on those analyses that leveraged a more representative sample and had greater statistical power. The caveat to this general rule was for those cases where the reduced sample displayed a substantially different pattern of relationships. In these instances, since the reduced sample was more likely to be reliable, these results are interpreted instead.

9.5 Results

Descriptive statistics and estimates of internal consistency for the LSA are reported in Table 12 and Table 13 located in Section 8.2.5.1. Table 19 reports these values for the materials used in the present study. As is evident in Table 19, all scales demonstrated reasonable levels of internal consistency within the reduced sample (α = .76 to .95), with estimates being somewhat lower in the full sample (α = .69 to .96). Sample means for self-esteem, self-efficacy, general mental ability, and OCBs directed toward the organization tended to be higher in the reduced sample.

9.5.1 Core Self-Evaluations

Zero-order and CMV-adjusted partial correlations between the LSA and core self-evaluations can be found in Table 20. Global satisfaction was found to be weakly positively correlated with both self-esteem and self-efficacy; however, these relations were not significant after adjusting for CMV. As such, support for Hypotheses 7 and 8 was not found.

The relation between facets of job satisfaction and core self-evaluations were examined in order to answer RQ5: Are the facets of job satisfaction differentially related to each of the core self-evaluation traits? From Table 20 several patterns of results emerged. First, the magnitude and significance of relations with self-esteem and self-

efficacy were not consistent across all facets of satisfaction. Second, the facets of satisfaction that displayed significant correlations with self-esteem and self-efficacy tended to be significantly related to both constructs. For example, satisfaction with Working Conditions, Coworkers, Autonomy, and Team Development tended to be significantly positively correlated with core self-evaluations. The magnitude of these relations ranged from weak-to-moderate. After controlling for CMV many of these relations remained statistically significant, though their magnitude was small. Other facets such as, but not limited to, satisfaction with Policies, Transparency, and Recognition displayed near zero, non-significant zero-order correlations with self-esteem or self-efficacy.

Third, the magnitude of significant relations tended to be similar across both constructs (i.e., if a facet was found to have a weak significant correlation with self-esteem it tended to also display a weak significant correlation with self-efficacy). Last, significant relations tended to be small and positive in nature among both zero-order and CMV-adjusted relations.

Table 19

Descriptive Statistics for Core Self-Evaluations, Intelligence, Workplace Behaviour, Commitment, and Turnover Intentions in Survey Sample 2

	Full			Reduced		
	α	*M*	*SD*	α	*M*	*SD*
Core Self-Evaluations						
Self-Esteem	.81	2.79	0.55	.86	2.87	0.60
Self-Efficacy	.91	7.93	2.52	.93	8.63	2.61
Intelligence						
GMA	.84	7.97	4.48	.79	8.93	4.14
EI	.92	5.64	0.78	.92	5.62	0.73
Workplace Behaviour						
OCB-O	.69	3.50	0.68	.76	3.62	0.74
OCB-I	.77	3.84	0.61	.80	3.85	0.63
CWB-O	.96	3.74	1.75	.96	3.37	1.69
CWB-I	.95	3.70	1.80	.95	3.32	1.78
Commitment						
Affective	.71	4.48	1.13	.79	4.61	1.23
Normative	.70	4.98	0.98	.76	4.81	1.03
Continuance	.87	5.05	1.24	.84	4.70	1.21
Turnover Intentions						
Organization	.88	2.99	1.11	.88	2.75	1.08
Job	.87	2.97	1.14	.88	2.78	1.11
Occupation	.87	2.98	1.15	.80	2.77	1.14

Note. α = Cronbach's alpha internal consistency estimate, *M* = mean, *SD* = standard deviation. Full sample consisted of *N* = 240. Reduced sampled consisted of *N* = 163. GMA = general mental ability, as measured with the ICAR. EI = ability based emotional intelligence, as measured by the WLEIS. OCB-O = organizational citizenship behaviours directed towards the organization; OCB-I = organizational citizenship behaviours directed toward individuals. CWB-O = counterproductive workplace behaviours directed towards the organization; CWB-I = counterproductive workplace behaviours directed toward individuals. Self-esteem was measured on a 4-point scale (1 = strongly disagree; 4 = strongly agree) and self-efficacy was measured on a 14-point scale (1 = strongly disagree; 14 = strongly agree). EI and commitment were measured on a 7-point scale (1 = strongly disagree; 7 = strongly agree). GMA scores were computed as the total number of items answered correctly, out of a possible 23 items. OCB was measured on a 5-point scale (1 = highly uncharacteristic; 5 = highly characteristic) and CWB was measured on a 7-point scale (1 = never; 7 = daily). Turnover intentions were measured on a 5-point scale (1 = strongly disagree; 5 = strongly agree).

Table 20

Zero-Order and CMV-Adjusted Correlations between the LSA-Extended and Core Self-Evaluations in Survey Sample 2

	Self-Esteem				Self-Efficacy			
	Full		Reduced		Full		Reduced	
	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$
Global	.16*	.08	.18*	.07	.09	.00	.16*	.05
Facets								
AbUt	.22***	.14*	.30***	.21**	.12	.03	.23**	.13
Auto	.19**	.11*	.25***	.15*	.15*	.07	.25***	.15*
Comp	-.03	.06	.02	-.11	-.18**	-.08	-.10	.02
CoWo	.25***	.18**	.31***	.22**	.20**	.12*	.29***	.19**
Ment	.13	.04	.19*	.08	.05	-.04	.13	.01
PAch	.02	-.08	.09	.03	-.09	.00	.00	-.14*
Poli	-.04	.05	.00	-.14*	-.11	-.02	-.03	.08
Prom	-.09	.00	-.03	.08	-.20**	-.10	-.12	.00
Reco	.08	-.01	.13	.01	-.04	.05	.07	-.06
Secu	.16*	.08	.20**	.09	.07	-.02	.14	.02
Serv	.08	-.01	.15	.04	-.09	.00	.02	-.11
Soli	-.02	.06	-.01	.10	-.08	.01	-.06	.05
StPl	-.05	.04	-.01	.10	-.08	.01	-.01	.10
Supe	.05	-.04	.09	-.03	-.01	.07	.08	-.04
TDev	.19**	.11*	.25**	.15*	.13*	.04	.24**	.14*
Tran	.00	-.10	.05	-.08	-.09	.00	.00	-.14*
ValC	.09	.00	.13	.01	.02	-.08	.11	-.01
WCon	.29***	.22***	.36***	.27***	.24***	.16**	.35***	.26***

Note. * denotes significance at $p < .05$, ** at $p < .01$, and *** at $p < .001$. Full sample consisted of $N = 240$. Reduced sampled consisted of $N = 163$. r_{xy} = zero-order correlation; $r_{xy\text{-}m}$ = correlation adjusted for common method variance; AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions.

9.5.2 Intelligence

Table 21 reports the zero-order correlations between job satisfaction and two types of intelligence: general mental ability and emotional intelligence. CMV-adjusted correlations are presented for emotional intelligence but not general mental ability. Because the ICAR is an ability-based measure with correct and incorrect responses it was not particularly vulnerable to CMV and therefore only zero-order correlations are presented.

A weak positive correlation (i.e., r = .10 to .29) was hypothesized between global job satisfaction and general mental ability (H9a). Global job satisfaction was not found to be significantly correlated with general mental ability. Sensitivity analyses conducted using G*Power (Faul, 1992-2019) suggested that a correlation of r = .16 could be detected with 80% power in the full sample, and a correlation of r = .19 in the reduced sample. As such, there may have been insufficient power to detect a significant correlation weaker than r = .16. The 95% confidence interval for the relation between global job satisfaction and general mental ability in the full sample was computed and found to be $-.10 < \rho < .15$. As such, H9a could not fully be tested since there was insufficient power to detect a correlation lower than r = .16, which the 95% confidence interval indicated might be possible in the population.

Research Question 4a considered whether or not certain facets of satisfaction would be more highly correlated with cognitive ability than others. In particular, it was expected that task-based facets (e.g., Ability Utilization and Personal Achievement) would display stronger associations than would interpersonal facets (e.g., Coworkers and Supervision). In general, this pattern of results was not observed, as the zero-order correlations between most facets of satisfaction and cognitive ability were not statistically significant. However, specific task-based facets of satisfaction, in particular Compensation and Promotion, were found to be weakly

negatively correlated with general mental ability, the implications of which will be considered in Section 10.1.5.1.

As predicted by Hypothesis 9b, global job satisfaction was found to be moderately positively correlated with emotional intelligence, both before and after controlling for CMV. However, due to the removal of trait-based scales of emotional intelligence from planned analyses, the comparative strength of relations with trait- versus self-reported ability-based emotional intelligence could not be tested. Research Question 4b asked whether interpersonal-facets of job satisfaction would be more strongly correlated with EI than task-based facets. All facets of satisfaction were found to be significantly correlated with EI, regardless of whether they were task-based or interpersonal in nature. In addition, these relations continued to be significant after adjusted for method effects. The magnitude of the CMV-adjusted relations between facets of job satisfaction and EI were moderate to high, regardless of whether the facets were interpersonal ($r_{xy\text{-}m}$ = .45 to .54) or task-based in nature ($r_{xy\text{-}m}$ = .33 to .64). Although not all interpersonal-facets were more highly correlated with EI than all task-based facets, there did seem to be some support for RQ 4b in that, generally speaking, the weakest correlations between job satisfaction and EI corresponded to some task-based facets of satisfaction.

Table 21

Zero-Order and CMV-Adjusted Correlations between the LSA-Extended and Intelligence in Survey Sample 2

	GMA		EI			
	Full	Reduced	Full		Reduced	
	r_{xy}	r_{xy}	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$
Global	.02	.01	.37***	.31***	.31***	.22**
Task-Based						
AbUt	.04	.03	.59***	.55***	.55***	.49***
Auto	.02	-.01	.62***	.58***	.61***	.56***
Comp	-.13*	-.21**	.42***	.36***	.36***	.27***
PAch	-.09	-.13	.50***	.45***	.47***	.40***
Poli	-.02	-.08	.48***	.43***	.44***	.36***
Prom	-.08	-.19*	.39***	.33***	.33***	.24***
Reco	-.04	-.11	.51***	.46***	.48***	.41***
Secu	.05	.03	.53***	.48***	.49***	.42***
StPl	.01	-.12	.48***	.43***	.42***	.34***
Tran	-.01	-.06	.50***	.45***	.44***	.36***
ValC	.09	.03	.56***	.52***	.51***	.44***
WCon	.10	.09	.67***	.64***	.67***	.63***
Interpersonal						
CoWo	.09	.07	.55***	.51***	.53***	.47***
Ment	-.01	-.07	.56***	.52***	.54***	.48***
Serv	-.02	-.06	.50***	.45***	.45***	.38***
Soli	-.03	-.05	.51***	.46***	.46***	.39***
Supe	-.05	-.07	.51***	.46***	.48***	.41***
TDev	.05	.05	.58***	.54***	.58***	.52***

Note. * denotes significance at $p < .05$, ** at $p < .01$, and *** at $p < .001$. Full sample consisted of $N = 240$. Reduced sampled consisted of $N = 163$. r_{xy} = zero-order correlation; $r_{xy\text{-}m}$ = correlation adjusted for common method variance; GMA = general mental ability. EI = emotional intelligence. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions.

9.5.3 Workplace Behaviours

Zero-order and CMV-adjusted correlations between job satisfaction, OCB, and CWB are reported in Table 22 and Table 23, respectively. As predicted by Hypothesis 10a, a significant, moderate positive correlation was found between global satisfaction and OCBs directed towards individuals. However, the correlation between job satisfaction and organizational OCBs did not reach statistical significance, therefore only partial support was found for H10a. In addition, global job satisfaction was not significantly correlated with CWBs. This finding was not in line with the published literature or the predictions made by Hypotheses 10b and c.

Research Question 5 asked whether satisfaction with specific facets of one's job would be more strongly correlated with behaviours directed toward a target that is similar to the respective facet. For example, would satisfaction with organizational policies be more strongly associated with OCBs and CWBs directed toward the organization rather than individuals. Correlational evidence reported in Table 22 demonstrated that after controlling for method effects, interpersonal facets of satisfaction were moderately positively correlated with OCBs directed towards individuals and non-significantly correlated with OCBs directed towards organizations. Most organizational facets of satisfaction were not significantly correlated with OCBs directed towards the organization after controlling for method effects, with the exception of Compensation, Promotion (negative), and Working Conditions (positive), which displayed small, significant relations. In addition, organizational facets of satisfaction displayed small to moderate positive CMV-adjusted correlations with OCBs directed towards individuals. As such, partial support for RQ 5 was found since on average, interpersonal facets of satisfaction were more strongly associated with interpersonal OCBs than were organizational facets of satisfaction. However, organizational facets of satisfaction were more highly correlated with interpersonal

OCBs than with organizational OCBs. The implications of these patterns of results will be discussed in Section 10.1.5.4.

When examining the relation between facets of job satisfaction and CWB, several organizational facets of satisfaction were found to have small positive correlations with CWBs directed towards the organization; however, only relations in the full sample remained statistically significant after adjusting for method effects. Organizational facets of satisfaction also displayed small positive CMV-adjusted correlations with interpersonal CWBs. After adjusted for CMV, correlations between interpersonal facets of satisfaction and CWBs tended to be non-significant, regardless of whether the target of the behaviours was the organization or individuals. The exception to this pattern was Solitude, which displayed a significant weak positive correlation with both organization and individual-based CWBs. The implications of these patterns of results will be discussed in Section 10.1.5.4.

Last, to explore whether or not emotional intelligence moderated the relation between job satisfaction and OCB/CWB (RQ6) a series of four moderations were tested using Hayes Process macro (Hayes, 2018). In particular, emotional intelligence as measured with the WLEIS was tested as a moderator of the relation between global job satisfaction and OCB-O, OCB-I, CWB-O, and CWB-I, respectively. These four moderations were tested in both the full and reduced samples. As reported in Table 24, none of the interaction terms in the full or reduced samples reached statistical significance. As such, there was no evidence to suggest that emotional intelligence moderated the relation between job satisfaction and OCB or CWB in the present study.

Table 22

Zero-Order and CMV-Adjusted Correlations between the LSA-Extended and OCB in Survey Sample 2

	OCB-O				OCB-I			
	Full		Reduced		Full		Reduced	
	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$
Global	.08	-.01	.11	-.01	.29***	.22***	.26***	.16*
Facets-O								
AbUt	.09	.00	.15	.04	.43***	.37***	.46***	.39***
Auto	.13*	.04	.19*	.08	.52***	.47***	.53***	.47***
Comp	-.23***	-.13*	-.20*	-.07	.24***	.16**	.23**	.13
PAch	-.12	-.03	-.08	.03	.35***	.29***	.33***	.24***
Poli	-.10	-.01	-.07	.04	.36***	.30***	.35***	.26***
Prom	-.21**	-.11*	-.19*	-.06	.24***	.16**	.20*	.09
Secu	.07	-.02	.11	-.01	.43***	.37***	.43***	.35***
StPl	-.11	-.02	-.09	.03	.37***	.31***	.39***	.31***
Tran	-.13	-.04	-.09	.03	.33***	.26***	.30***	.21**
ValC	.06	-.03	.12	.00	.48***	.43***	.50***	.43***
WCon	.24***	.16**	.29***	.19**	.52***	.47***	.53***	.47***
Facets-I								
CoWo	.18**	.10	.23**	.13	.50***	.45***	.50***	.43***
Ment	.05	-.04	.10	-.02	.46***	.41***	.45***	.38***
Reco	-.04	.05	.01	-.12	.39***	.33***	.41***	.33***
Serv	-.04	.05	.01	-.12	.36***	.30***	.40***	.32***
Soli	-.09	.00	-.09	.03	.40***	.34***	.35***	.26***
Supe	.00	-.10	.04	-.09	.36***	.30***	.35***	.26***
TDev	.17	.09	.23**	.13	.50***	.45***	.55***	.49***

Note. * denotes significance at $p < .05$, ** at $p < .01$, and *** at $p < .001$. Full sample consisted of $N = 240$. Reduced sampled consisted of $N = 163$. r_{xy} = zero-order correlation; $r_{xy\text{-}m}$ = correlation adjusted for common method variance; OCB-O = organizational citizenship behaviours targeted towards the organization; OCB-I = organizational citizenship behaviours targeted towards individuals. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions.

Table 23

Zero-Order and CMV-Adjusted Correlations between the LSA-Extended and CWB in Survey Sample 2

	CWB-O				CWB-I			
	Full		Reduced		Full		Reduced	
	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$
Global	-.04	.05	-.09	.03	.03	-.07	-.01	.10
Facets-O								
AbUt	.02	-.08	-.08	.03	.07	-.02	-.02	.09
Auto	-.02	.06	-.11	.01	.03	-.07	-.07	.04
Comp	.25***	.18*	.19*	.08	.31***	.24***	.27***	.17*
PAch	.19**	.11*	.08	-.04	.26***	.19**	.18*	.07
Poli	.19**	.11*	.12	.00	.26***	.19**	.20*	.09
Prom	.28***	.21***	.20**	.09	.34***	.27***	.29***	.19**
Secu	.04	-.05	-.05	.06	.09	.00	.01	-.12
StPl	.20**	.12*	.14	.02	.23***	.15**	.17*	.06
Tran	.19**	.11*	.10	-.02	.25***	.18**	.17*	.06
ValC	.07	-.02	-.02	.09	.11	.02	.02	-.11
WCon	-.03	.06	-.13	-.01	.00	-.10	-.10	.02
Facets-I								
CoWo	-.04	.05	-.12	.00	-.01	.07	-.08	.03
Ment	.12	.03	.03	-.10	.16*	.08	.07	-.06
Reco	.14*	.05	.06	-.07	.16*	.08	.11	-.01
Serv	.11	.02	.02	-.11	.14*	.05	.06	-.07
Soli	.20**	.12*	.17	.06	.23***	.15**	.21**	.10
Supe	.10	.01	.03	-.10	.15*	.07	.08	-.04
TDev	-.02	.06	-.11	.01	.01	-.09	-.08	.03

Note. * denotes significance at $p < .05$, ** at $p < .01$, and *** at $p < .001$. Full sample consisted of $N = 240$. Reduced sampled consisted of $N = 163$. r_{xy} = zero-order correlation; $r_{xy\text{-}m}$ = correlation adjusted for common method variance; CWB-O = counterproductive workplace behaviours targeted towards the organization; CWB-I = counterproductive workplace behaviours targeted towards individuals. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions.

Table 24

Unstandardized Regression Coefficients for Moderating Effects of EI on Global Job Satisfaction, OCB, and CWB

	Full			Reduced		
Moderated Relation	*b*	*SE*	*p*	*b*	*SE*	*p*
Job Sat - OCB-O	0.1087	0.0853	.2041	0.0884	0.1038	.3955
Job Sat - OCB-I	0.0215	0.0593	.7173	0.0327	0.0669	.6258
Job Sat - CWB-O	-0.3715	0.2291	.1063	-0.3797	-.24878	.1290
Job Sat - CWB-I	-0.3710	0.2370	.1190	-0.3137	0.2639	.2364

Note. Full sample consisted of $N = 240$. Reduced sampled consisted of $N = 163$. Job Sat = global job satisfaction, as measured by the LSA. OCB-O = organizational citizenship behaviours targeted towards the organization; OCB-I = organizational citizenship behaviours targeted towards individuals. CWB-O = counterproductive workplace behaviours targeted towards the organization; CWB-I = counterproductive workplace behaviours targeted towards individuals. *b* = unstandardized regression coefficient, *SE* = standard error of the regression coefficient, *p* = significance value.

9.5.4 Organizational Commitment

The relations between job satisfaction and organizational commitment are reported in Table 25. As discussed in Chapter 6, specific predictions were limited to the relations between global job satisfaction and affective and normative commitment. This is because these mindsets of commitment tend to represent rather global attitudes one may hold towards their organization. The compatibility principle would suggest that such global attitudes are likely to be best predicted by attitudes of a similarly broad nature, such as global job satisfaction (Ajzen & Fishbein, 1977). In addition, there seems to be a dearth of research examining the relation between facets of satisfaction and organizational commitment. The present study aims to contribute to this literature by presenting correlations between LSA facets and affective, normative, and continuance commitment. However, for the reasons stated above, this constitutes an exploratory examination of the relations and specific predictions and/or research questions were not proposed.

As predicted by Hypothesis 11a, global job satisfaction was found to be moderately positively correlated with both affective and normative commitment. However, contrary to predictions (H 11b), the magnitude of these relations was not stronger for affective than normative commitment.

An examination of the facets of job satisfaction revealed that all facets were positively correlated with both affective and normative commitment, with the exception of Solitude, which was not meaningfully related to affective commitment. The strongest relations of job satisfaction with affective commitment occurred in the case of satisfaction with Autonomy, Recognition, Supervision, Ability Utilization, Coworkers, and Strategic Planning. The strongest correlations of job satisfaction with normative commitment occurred with Recognition, Strategic Planning, Personal Achievement, Supervision, and Transparency. All facets of satisfaction tended to

display weak, negative relations with continuance commitment in the reduced sample, with no relations reaching statistical significance after controlling for CMV. The implications of these findings will be discussed in Section 10.1.5.5.

9.5.5 Turnover Intentions

Zero-order and CMV-adjusted correlations between job satisfaction and intentions to leave one's organization, job, and occupation are reported in Table 26. As with organizational commitment, hypotheses were limited to associations between global job satisfaction and turnover intentions. Global job satisfaction was found to be weakly negatively correlated with intentions to turnover from one's organization, job, and occupation. After controlling for CMV none of the relations in the full sample remained statistically significant. However, relations with organizational and job turnover remained significant after controlling for CMV in the reduced sample. Therefore, partial support for Hypothesis 12 was found, with the magnitude of the relations somewhat smaller than predicted.

An exploratory examination of the relation between facet-level satisfaction and turnover intentions revealed that the facets of satisfaction that were most strongly associated with turnover intentions tended to be significant regardless of the target of turnover. In particular, satisfaction with Ability Utilization, Autonomy, and Coworkers were among the facets that were most strongly negatively correlated with turnover intentions, though relations with occupational turnover were no longer significant after adjustments were made for method effects. In contrast, facets such as Compensation and Promotion were not significantly correlated with turnover intentions. In addition, the magnitude of correlations between job satisfaction and turnover intentions were consistently higher in the reduced sample than the full sample, though many failed to reach statistical significance after adjustments were made for CMV. Implications of these findings and other relevant patterns of associations will be discussed in Section 10.1.5.5.

Table 25

Zero-Order and CMV-Adjusted Correlations between the LSA-Extended and Commitment in Survey Sample 2

	AC				NC				CC			
	Full		Reduced		Full		Reduced		Full		Reduced	
	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$
Global	.34***	.27***	.38***	.30***	.37***	.31***	.38***	.30***	-.05	.04	-.16*	-.04
Facets												
AbUt	.34***	.27***	.41***	.33***	.38***	.32***	.35***	.26***	-.01	.07	-.17*	-.05
Auto	.40***	.34***	.47***	.40***	.42***	.36***	.40***	.32***	.01	-.09	-.14	-.02
Comp	.21**	.13*	.25***	.15*	.45***	.40***	.39***	.31***	.09	.00	-.08	.03
CoWo	.37***	.31***	.41***	.33***	.34***	.27***	.32***	.23**	.04	-.05	-.08	.03
Ment	.20**	.12*	.26***	.16*	.38***	.32***	.35***	.26***	.01	-.09	-.03	.08
PAch	.30***	.23***	.38***	.30***	.48***	.43***	.46***	.39***	.04	-.05	-.15	-.03
Poli	.24***	.16**	.32***	.23**	.45***	.40***	.43***	.35***	.12	.03	-.02	.09
Prom	.21**	.13*	.27***	.17*	.46***	.41***	.41***	.33***	.10	.01	-.07	.04
Reco	.39***	.33***	.46***	.39***	.52***	.47***	.50***	.43***	.00	-.10	-.18*	-.05
Secu	.29***	.22***	.33***	.24***	.32***	.25***	.26***	.16*	.01	-.09	-.12	.00
Serv	.23***	.15**	.28***	.18**	.42***	.36***	.35***	.26***	.08	-.01	-.10	.02
Soli	.13*	.04	.14	.02	.37***	.31***	.33***	.24***	.17*	.09	.10	-.02
StPl	.35***	.29***	.41***	.33***	.52***	.47***	.49***	.42***	.05	-.04	-.09	.03
Supe	.38***	.32***	.45***	.38***	.48***	.43***	.44***	.36***	.05	-.04	-.09	.03
TDev	.32***	.25***	.39***	.31***	.36***	.30***	.31***	.22**	.07	-.02	-.06	.05
Tran	.25***	.18**	.32***	.23**	.48***	.43***	.44***	.36***	.13*	.04	-.02	.09
ValC	.29***	.22***	.35***	.26***	.42***	.36***	.39***	.31***	.06	-.03	-.09	.03
WCon	.33***	.26***	.38***	.30***	.34***	.27***	.31***	.22**	.05	-.04	-.05	.06

Note. * denotes significance at $p < .05$, ** at $p < .01$, and *** at $p < .001$. Full sample consisted of $N = 240$. Reduced sampled consisted of $N = 163$. r_{xy} = zero-order correlation; $r_{xy\text{-}m}$ = correlation adjusted for common method variance; AC = affective commitment, NC = normative commitment, CC = continuance commitment, AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions.

Table 26

Zero-Order and CMV-Adjusted Correlations between the LSA-Extended and Turnover Intentions in Survey Sample 2

	Organization				Job				Occupation			
	Full		Reduced		Full		Reduced		Full		Reduced	
	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$	r_{xy}	$r_{xy\text{-}m}$
Global	-.15*	-.06	-.29***	-.15*	-.20**	-.10	-.30***	-.16*	-.14*	-.05	-.24**	-.11
Facets												
AbUt	-.12	-.03	-.29***	-.15*	-.11	-.02	-.28***	-.14*	-.12	-.03	-.26***	-.13
Auto	-.11	-.02	-.27***	-.13*	-.13*	-.04	-.27***	-.13*	-.11	-.02	-.20**	-.07
Comp	.10	.01	-.04	.07	.09	.00	-.02	.09	.10	.01	.03	-.10
CoWo	-.13	-.04	-.26***	-.13	-.13	-.04	-.26***	-.13	-.15*	-.06	-.24**	-.11
Ment	.02	-.08	-.10	.02	-.01	.07	-.11	.01	-.01	.07	-.09	.03
PAch	-.02	.06	-.23**	-.10	-.03	.06	-.20*	-.07	.00	-.10	-.16*	-.04
Poli	.07	-.02	-.09	.03	.07	-.02	-.06	.05	.10	.01	.01	-.12
Prom	.09	.00	-.07	.04	.10	.01	-.05	.06	.13	.04	.02	-.11
Reco	-.03	.06	-.20*	-.07	-.05	.04	-.18*	-.05	-.03	.06	-.12	.00
Secu	-.06	.03	-.18*	-.05	-.06	.03	-.18*	-.05	-.03	.06	-.12	.00
Serv	-.02	.06	-.17*	-.05	-.01	.07	-.14	-.02	-.03	.06	-.14	-.02
Soli	.12	.03	.04	-.09	.15	.07	.07	-.06	.15*	.07	.09	-.03
StPl	.03	-.07	-.09	.03	.06	-.03	-.04	.07	.08	-.01	.01	-.12
Supe	-.08	.01	-.22**	-.09	-.09	.00	-.22**	-.09	-.04	.05	-.14	-.02
TDev	-.08	.01	-.22**	-.09	-.07	.02	-.21**	-.08	-.07	.02	-.17*	-.05
Tran	.05	-.04	-.10	.02	.04	-.05	-.09	.03	.05	-.04	-.04	.07
ValC	.00	-.10	-.15	-.03	-.01	.07	-.15	-.03	.00	-.10	-.10	.02
WCon	-.08	.01	-.20**	-.07	-.09	.00	-.21**	-.08	-.10	-.01	-.19*	-.06

Note. * denotes significance at $p < .05$, ** at $p < .01$, and *** at $p < .001$. Full sample consisted of $N = 240$. Reduced sampled consisted of $N = 163$. r_{xy} = zero-order correlation; $r_{xy\text{-}m}$ = correlation adjusted for common method variance; OCB-O = organizational citizenship behaviours targeted towards the organization; OCB-I = organizational citizenship behaviours targeted towards individuals. CWB-O = counterproductive workplace behaviours targeted towards the organization; CWB-I = counterproductive workplace behaviours targeted towards individuals. AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Ment = Mentorship, PAch = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, TDev = Team Development, Tran = Transparency, ValC = Value Congruence, WCon = Working Conditions.

Chapter 10

10. Discussion

Despite the fact that job satisfaction is one of the most frequently studied constructs in the I/O domain (Spector, 1997), there is a dearth of information on the satisfaction of one of the most prominent and influential groups in organizations – leaders. Little is known about how job satisfaction is experienced by this subgroup of employees. As such, this dissertation sought to address whether common measures of satisfaction were sufficient for capturing the unique aspects of leaders' jobs that may contribute to their satisfaction.

Using a mixed-methods approach, this dissertation gathered information from a diverse group of leaders, employed across a variety of organizations and industries, to identify what facets contributed most to their satisfaction, or lack of, at work. Using this information, a novel measure, the LSA was created to assess these facets of satisfaction, allowing for a more thorough understanding of the experiences of leaders. To increase the utility of this new measure, two versions of the LSA were created – the LSA-Extended and the LSA-Brief. Preliminary validation evidence supporting the LSA-Extended was reviewed by examining the relations between leaders' satisfaction and various work attitudes and behaviours.

10.1 Key Findings and Implications

10.1.1 Themes of Leader Satisfaction

To gain a greater understanding of what contributes to satisfaction or dissatisfaction in a leadership role, a series of structured interviews were conducted and open-ended survey questionnaires were administered to a variety of leaders. These leaders provided a diverse perspective, as they were employed by a number of different

organizations across North America, with over 18 industries represented. As such, leaders were likely to have diverse experiences that contributed to satisfaction in their role.

Several themes emerged when leaders were asked about their satisfaction with their current job. Some of the most frequently mentioned themes were those that traditional job satisfaction measures currently assess, such as compensation structure, relationships with coworkers, and the degree to which one's work challenges oneself. However, there were also a number of themes that emerged which reflected aspects of one's job that are not assessed by common job satisfaction measures. These key aspects could be summarized into four themes: Mentorship, Team Development, Strategic Planning, and Transparency. Each of these themes is discussed in more detail below.

10.1.1.1 Mentorship

When leaders were asked which areas of their job contributed to satisfaction in their role, a number of participants responded that having the opportunity to support the development of their followers, and seeing them succeed in their own right was an important element. Although mentorship is not exclusively limited to leaders, it is certainly more likely to be a component of one's job if they hold a formal positon of authority within their organization. By the simple fact that leaders, as defined in the current dissertation, have direct reports, the behaviour of those direct reports is likely to have a meaningful influence on leaders' attitudes towards their work.

Although common measures of job satisfaction often capture satisfaction with coworkers, it could be argued that there is something distinct about the relationship between a leader and their follower since the resulting hierarchy of power implies leader influence over followers. When asked as a part of the current research project, leaders noted experiencing a sense of pride that comes from knowing that one has transferred

their knowledge and experience to another in a way that can allow that individual to become more successful in their own career. This sentiment of mentorship was present in leaders' responses who indicated experiencing satisfaction when seeing their followers succeed, even if that meant their follower ultimately left their team and experienced success in another organization.

10.1.1.2 Team Development

Related, but somewhat distinct from the theme of Mentorship was the theme of Team Development. Where Mentorship was often used to refer to one-on-one leader-follower interactions that resulted in the personal and professional development of the follower, the theme of Team Development was much more focused on leader-group dynamics. In particular, leaders described experiencing satisfaction from bringing people together, facilitating teamwork, managing conflict, and leading the team towards the successful completion of key objectives. As with the theme of Mentorship, Team Development could be considered a major, or even definitional, component of a leader's job. As such, its exclusion from an assessment of leaders' job satisfaction is potentially problematic.

10.1.1.3 Strategic Planning

Where the Mentorship and Team Development themes identified the importance of interpersonal interactions and how they contributed to leader satisfaction, the remaining two themes, Strategic Planning and Transparency, were more closely related to operational considerations of the organization. In particular, the Strategic Planning theme identified how a leader's behaviour had the capacity to impact the direction of their organization more broadly. For example, leaders indicated that when they had the opportunity to contribute meaningful ideas at a senior level, and those ideas were

acknowledged, considered, and acted upon in a way that positively impacted the organization this was an important contributing factor to their satisfaction in their role.

10.1.1.4 Transparency

The theme of Transparency reflected whether or not the environment was conducive to the open and honest flow of information. More specifically, this described whether information was shared in a way that supported and encouraged collaboration across employees, rather than fostering miscommunication, misunderstanding, and informational cliques or silos. Arguably this notion of transparency would be meaningful to employees across all levels of an organization. However, it may be particularly salient for those who hold a leadership position, since, by definition, an organization's leadership team should be working towards a common goal of organizational success. As such, one would expect that for a leadership team to be successful they would display a degree of openness, teamwork, and comradery in the pursuit of those goals.

10.1.1.5 Importance of New Facets of Leader Satisfaction

In general, the data obtained from the structured interviews and open-ended survey questions supported Hypothesis 1, which stated that leaders were expected to identify aspects of their jobs as being important to their satisfaction that were not previously assessed by popular job satisfaction measured, as outlined in Appendix A. This hypothesis was supported via the identification of four new facets of job satisfaction that were of particular importance to leaders. In addition to identifying these novel facets, the data suggested that, on average, these facets were rated as moderately-to-extremely important to leaders' satisfaction. Also, when asked to rate the importance of 20 facets of their job, two of the four novel facets – Team Development and Transparency – were rated as among the top five most important contributors to satisfaction among sampled

leaders. As such, these data suggested that not only might common job satisfaction measures be deficient in their measurement of satisfaction among workplace leaders, but that the factors they may fail to measure could be among some of the most important factors to leaders' satisfaction. This suggests that researchers who plan to conduct studies of leaders' job satisfaction in the future may want to consider including measures of these novel facets in order to provide a more thorough representation of how leaders' attitudes are influenced by their work.

10.1.2 Development of the LSA

Based on the data obtained from interviews with leaders, a new measure of job satisfaction was created, the LSA. The development of this measure followed the recommendations and best practices detailed by Hinkin (1998), Jackson (1971), and Lane et al. (2016). As such, specific facets of job satisfaction were defined based on the themes that emerged from structured interviews and open-ended survey responses. Care was taken to not only describe examples of satisfaction and dissatisfaction associated with each facet, but also to describe how the facets differed from one another. Then, a pool of items two to five times the size of the final scale length was created for each facet. Item pools were subjected to several rounds of revision based on psychometric analyses and SME review. The final result was a 90 item measure assessing 18 facets of satisfaction, where each facet demonstrated sufficient internal consistency (Kline, 2000).

Because one of the goals of this dissertation was to create a measure that would have utility for both researchers and practitioners, a condensed version of the LSA was also created, named the LSA-Brief. Since each facet was defined to reflect a relatively narrow construct, single-item indicators of each facet were selected (Sackett & Larson, 1990). These single-item indicators were selected based on the degree to which they had

high conceptual overlap with their respective facet definitions, demonstrated high corrected-item total correlations with their intended scale, and for which SMEs sorted onto their respective facets with 100% accuracy. Setting these criteria helped to ensure that the items would be unambiguous when rated by leaders, thereby supporting their use as single-item indicators (Sackett & Larson).

As a result of the test development procedures followed in this dissertation, the resultant LSA measures have the potential to serve two important functions. First, the extended version of the LSA provides an option for those looking for a comprehensive, reliable, and psychometrically sound measure of satisfaction when time permits for the administration of the full item pool. For example, researchers who are interested in advancing theories of leader satisfaction, or for those examining how existing research on job satisfaction extends to the experiences of leaders, may benefit from administering the full version of the assessment. In contrast, the brief version of the LSA may be useful for those interested in gaining a quick but robust understanding of leaders' attitudes, or when time constraints would otherwise not permit the collection of such information. For example, organizations who are interested in identifying areas of dissatisfaction among their leadership team, or executive coaches who would like more information on the greater context in which their coaching clients work may find utility administering the LSA-Brief. Irrespective of which version of the assessment is administered, users of the LSA are likely to gain a more comprehensive understanding of the satisfaction of leaders than if existing popular measures of job satisfaction were used.

10.1.3 Dimensionality of Job Satisfaction

An important step in the test development process is to examine the dimensionality of the proposed measure. Unfortunately relatively little work has been

done examining the dimensionality of job satisfaction in the literature. Those studies that have been conducted have tended to focus on exploratory methods (Hancer & George, 2004; Tan & Hawkins, 2000). As such, a major contribution of the present study was the application of various advanced modeling techniques, including CFA, hierarchical, bifactor, and ESEM analyses to examine the dimensionality of job satisfaction.

A lack of previous research using the abovementioned methods in the study of job satisfaction meant it was not possible to examine validation evidence of the dimensionality of the new LSA-Extended by comparing it against previous research findings. To overcome this limitation, the present study also examined the dimensionality of job satisfaction using the MSQ, an extremely popular and well-researched measure of job satisfaction whose items, rating scale, and facet structure closely matched those of the LSA-Extended. Best-fitting models of the LSA were compared to those obtained from the MSQ to determine if the two measures of satisfaction suggested a similar underlying structure of the construct.

It is well-known that facets of job satisfaction tend to be highly correlated with one another (Scarpello & Campbell, 1983). As a result, the few studies that have examined the factor structure of facet-level measures of satisfaction using confirmatory methods have often struggled to find acceptable model fit. This has often been due to exceptionally high correlations among latent variables. In order to achieve convergence of these models, researchers have typically included a higher-order factor of general satisfaction (Bowling et al., 2018; Heritage et al., 2015; McIntyre & McIntyre, 2010). The issue with the application of these hierarchical models is that their implementation

seems to have been data-driven, without much discussion of their theoretical implications.

As discussed by Markon (2019), there are a number of theoretical assumptions that are associated with hierarchical models. In particular, their application to the study of job satisfaction implies that global satisfaction is the sum of facet satisfaction. Proponents of a hierarchical model of job satisfaction would argue that individuals tend to form global attitudes about their jobs, which in turn impacts their level of satisfaction with various facets or components of their job. This would seem to fit with the argument that facets of job satisfaction can and should be aggregated to form a global measure of satisfaction. However, as discussed earlier in this dissertation, the prevailing conclusion within the literature is that facets of satisfaction should not be aggregated, and that facet-level satisfaction is meaningfully distinct from global satisfaction. As such, the use of hierarchical models to explain the dimensionality of job satisfaction seems to contradict the theoretical understanding of the nature of satisfaction in the field.

The shared variance among facets of job satisfaction may be more appropriately modeled using a bifactor approach. A bifactor model would allow for the specification of an overall level of satisfaction to which all facets contribute. Importantly, the bifactor approach also allows for the modeling of unique facet variance. From a theoretical perspective, this suggests that individuals may form general impressions of their job, but that facets remain important predictors that contribute unique variance to relevant outcomes. This implies that although overall satisfaction is relevant to consider, facets are important in their own right. This explanation is more in line with the way job satisfaction is described in the literature than is the hierarchical approach.

As such, this dissertation was one of the first known studies to systematically compare the statistical and theoretical implications of various confirmatory techniques in the study of the dimensionality of job satisfaction. In particular, the bifactor model was found to be associated with improved model fit over the unidimensional and hierarchical models. In addition, this pattern of results was observed for both the LSA and the MSQ, across two independent samples of leaders.

It is important to note that although the bifactor models reported in this dissertation were associated with incremental statistical improvements in model fit, there was also evidence to support a single factor of satisfaction. The unidimensional model was found to fit the data well, and within the bifactor model all items had strong loadings on the general factor. Those researchers who may be inclined to advocate for a more parsimonious model of job satisfaction would be supported in this position based on the data presented here. However, a strong argument could be made that the added complexity of the bifactor approach is warranted, given that many items did demonstrate unique variance associated with the facets of satisfaction. As such, an argument could also be made for the fact that a unidimensional approach to job satisfaction may lead researchers to miss potentially meaningful sources of information, and that the bifactor approach allows for a more nuanced approach to measurement.

There are two important implications of this investigation of the dimensionality of job satisfaction. First, it was found that the dimensionality of the new measure of job satisfaction was closely aligned with a well-validated and popular measure of satisfaction, thereby demonstrating support for the new measure. Further support for the importance of facets as meaningfully distinct constructs was obtained from SME ratings.

When asked to sort LSA items into their relevant facets, SMEs were able to do so for all items included in the final version of the extended LSA with at least 80% accuracy. For those instances where at least 80% rater agreement was not obtained for the majority of items on a given facet, the reasons for inaccuracy in ratings were reviewed and items and/or facets were modified or dropped from the scale as necessary. This resulted in a final LSA with 18 conceptually distinct facets of job satisfaction, each of which were found to significantly contribute to a general factor of satisfaction.

Second, the best-fitting model that was identified for both measures was also the one that more closely aligned with the conceptualization of job satisfaction in the literature. Despite the fact that it traditionally has not been studied in this manner, the data from the present studies seemed to support the theoretical rationalizations of past researchers (Ironson et al., 1989; Spector, 1997). As such, future researchers who examine the dimensionality of job satisfaction may wish to consider including an investigation of bifactor models among their planned analyses.

10.1.4 Validation of the LSA

Another important step in the test development process is to examine evidence of the validity of the new measure. In terms of the LSA, this included an investigation of concurrent and construct validity. Given that the LSA included an item which asked directly about overall satisfaction with one's job, this scale was expected to be highly correlated with other global measures of job satisfaction, as predicted in Hypothesis 2. This prediction was supported, as the correlation between the global scale of the LSA and the global scale of the MOAQ was found to be statistically significant, and moderate in strength, in two independent samples of leaders.

Further evidence of concurrent validity was reviewed by examining the correlations between the LSA-Extended and the MSQ. Hypothesis 3a stated that LSA facets which were defined a priori (see Appendix A) were expected to be strongly positively correlated with analogous scales on the MSQ. In addition, facets of the LSA that emerged as a result of interviews and surveys with leaders were expected to be moderately-to-weakly correlated with existing facets of the MSQ (H3b). Once again, support for these predictions was found, as the average correlation between LSA facets and their MSQ counterparts was higher than the average correlation between leader-specific facets of the LSA and each of the MSQ facets.

10.1.5 Expansion of the Nomological Network of Job Satisfaction

As discussed in Chapter 3, an important step in examining the validation evidence of a new measure is evaluating the extent to which it fits within the existing nomological network of the construct (Hinkin, 1998; Murphy & Davidshofer, 2005). This dissertation not only examined the relation between the LSA-Extended and known correlates of job satisfaction, such as core-self evaluations, intelligence, work behaviours, commitment, and turnover intentions, but it also went further in an attempt to expand this nomological network by posing research questions as to how the facets of satisfaction may be differentially related to these various correlates of job satisfaction. What follows is a discussion of the results of this investigation, as well as their implications.

10.1.5.1 Core Self-Evaluations

The term core self-evaluations is used to refer to a set of four traits: self-esteem, generalized self-efficacy, locus of control, and Neuroticism, which when taken together represent a conceptualization individuals hold about themselves regarding their self-worth and perceived competence (Judge et al., 1998). Based on previous research it was

predicted that the global job satisfaction scale of the LSA would be positively correlated will all four core self-evaluation traits (Judge & Bono, 2001). Unreliability in the measurement of locus of control and Neuroticism meant that it was not possible to test the predicted relations between these variables and job satisfaction in the present study. In addition, although weak positive correlations were observed between job satisfaction, self-esteem, and self-efficacy, the magnitude of these relations were not statistically significant after controlling for CMV. As such, support for Hypotheses 7 and 8 was not found.

In an attempt to expand the nomological network, RQ5 asked whether the facets of satisfaction would be differentially related to each of the core self-evaluation traits. An examination of these correlations showed that some facets of satisfaction were significantly correlated with self-esteem and self-efficacy, while others were not. Interestingly, satisfaction with Ability Utilization and Autonomy was found to be weakly positively correlated with both self-esteem and self-efficacy, suggesting that those who have a high sense of self and confidence in their abilities are more likely to be satisfied with the extent to which they feel their abilities are being utilized at work and the extent to which they are given the latitude to make decisions and perform their job as they feel is best. Although causality cannot be inferred from these cross-sectional relations, it would be interesting to examine the directionality of these relations in future research. For example, is it the case that those with high self-esteem and self-efficacy are drawn to jobs that allow them to exercise their abilities, or do these types of environments provide opportunities for employees to succeed and demonstrate their abilities, thereby fostering self-esteem and self-efficacy?

10.1.5.2 Cognitive Ability

Previous researchers have demonstrated a small but significant relation between job satisfaction and cognitive ability (Gonzalez-Mule et al., 2017). As such, a weak positive correlation was hypothesized in the present study (H9a). However there was little evidence to support this hypothesis, as a significant relation was not found in the second survey sample. However, Hypothesis 9a could not be fully tested since the loss of participants due to unreliability in the data led to insufficient statistical power to detect as significant correlation as low as $r = .10$.

It has been argued that the nature of the relation between job satisfaction and cognitive ability may in part be mediated by job complexity. That is to say, those with greater cognitive ability are more likely to be drawn to more complex jobs, as suggested by the gravitational model (McCormic et al., 1972). More complex jobs tend to be associated with greater autonomy and task significance, which job design theories posit will also be associated with more positive attitudes towards ones job (Hackman & Oldham, 1976; Ryan & Deci, 2000). As such, cognitive ability is thought to be associated with greater job satisfaction to the extent that it allows individuals to succeed in jobs that are more likely to be satisfying by nature of their design (Gonzalez-Mule et al., 2017).

Assuming this model were correct, one might expect to observe positive correlations between task-based facets of job satisfaction, such as Ability Utilization and Autonomy, and cognitive ability. However, in the present study, these relations were not found to be statistically significant. In fact, none of the LSA facets were significantly correlated with cognitive ability, except Compensation and Promotion, which demonstrated small negative relations. Although not hypothesized, these negative

relations might be explained in light of recent findings by Maltarich, Nyberg, and Reilly (2010).

Maltarich and colleagues (2010) examined the relation between cognitive ability, job complexity, and turnover and found that for jobs with high cognitive demands, the relation between cognitive ability and voluntary turnover was curvilinear. That is, employees with lower cognitive abilities chose to leave jobs with high cognitive demands, presumably because they struggled to be successful in the role, especially as compared to their higher-cognitive ability colleagues. Maltarich et al. posited that employees with higher cognitive ability were more likely to voluntarily leave their jobs because they had a greater number of alternatives and could move to more attractive offers.

In the present study, although cognitive demands of the job were not assessed directly, the use of a leader sample implies an inherent degree of job complexity. As such, the pattern of results observed by Maltarich et al. (2010) might be useful for explaining the negative correlations that were observed between some facets of satisfaction and cognitive ability in the present study. If, as Maltarich et al. suggested, individuals with higher cognitive abilities, working in cognitively demanding jobs, are more likely to voluntarily leave those organizations due to the presence of more attractive offers, it follows that these same "pulling" forces might have an impact on their job satisfaction as well. For example, it could be argued that the negative correlations between Compensation, Promotion, and cognitive ability were a function of leaders with higher cognitive ability being aware of alternative career options and possibly comparing the pay and promotion options of their current position to known alternatives. As a result,

this could lead to somewhat less satisfaction with these facets of their current jobs. More research is needed to examine the veracity of this relationship, as such findings could have substantial implications for the recruitment and selection literature. Best practices in selection often recommend that selecting candidates with the highest cognitive ability scores will result in better hiring decisions (Schmidt & Hunter, 1998). Although this statement may be true in terms of performance on the job, the individual's level of cognitive ability may have consequences for how long they choose to remain with the organization, if future research is found to replicate the pattern of results observed in the present study.

10.1.5.3 Emotional Intelligence

Turning to the relation between job satisfaction and EI, the present study found evidence of a significant positive correlation between LSA global satisfaction and EI, as predicted by previous research (Miao et al., 2017). Research Question 4b posited that interpersonal facets of job satisfaction (i.e., Coworkers, Mentorship, Service) may be more highly correlated with EI than task-based facets of satisfaction would be (i.e., Promotion, Compensation). In contrast, the evidence suggested that all facets of satisfaction measured by the LSA were significantly positively correlated with EI. Although interpersonal facets such as Coworkers, Mentorship, and Team Development did display moderate-to-high correlations with EI, other task-based facets such as Ability Utilization, Autonomy, and Working Conditions demonstrated similarly high relations.

Previous research has demonstrated that although there is a trait-based component of EI, it is also something that can be learned and developed over time (Hodzic, Scharfen, Ripoll, Holling, & Zenasni, 2018). A strong case can be made for having emotionally intelligent leaders, and this is likely the reason why the leadership development market is

saturated with EI-based assessments and development programs (Golnaz, 2012). The evidence presented as part of this dissertation suggests that the relation between job satisfaction and EI is important across all facets of satisfaction. As such, further investigations into the mechanisms underlying the relations between job satisfaction and EI could be helpful for providing evidence of the utility of these EI-focused leadership development programs.

10.1.5.4 Workplace Behaviours

This dissertation examined the relations between job satisfaction and two important groups of workplace behaviours – OCBs and CWBs. Social exchange theory (Thibaut & Kelley, 1959) would suggest that employees who are more satisfied with their work environments will respond to these conditions by acting in a way that benefits the organization and the people in it (i.e., greater OCBs). In contrast, those who are less satisfied with their jobs will be expected to engage in more deviant behaviours (i.e., greater CWBs) than their satisfied peers.

In the present study, global job satisfaction was found to be significantly positively correlated with OCBs directed towards individuals, but not towards the organization. In addition, the relation between global job satisfaction and CWBs was not significant, regardless of the target of the behaviours. Interestingly, facets of satisfaction were found to be more highly correlated with both OCBs and CWBs than global satisfaction was. In addition, across both OCBs and CWBs, job satisfaction facets were more highly correlated with behaviours targeted towards individuals, rather than the organization. These findings suggest there may be meaningful relations between individuals' work attitudes and how they choose to interact with others at work. Importantly, although interpersonal facets of satisfaction such as Coworkers, Supervision,

and Team Development were associated with greater self-reported engagement in OCBs, satisfaction with more organizational facets such as Ability Utilization, Policy, Value Congruence, and Working Conditions were also associated with OCBs. From these results one could conclude that how a leader chooses to interact with their colleagues may be influenced, in part, by their satisfaction with aspects of their job that are largely independent from their coworkers. This suggests that factors within the organization's control (i.e., Autonomy, Security, and Working Conditions) have the potential to impact proactive behaviours between coworkers. More research is needed to understand the mechanisms underlying these relations, the results of which may be of utility to organizations that are looking to foster a culture of support amongst colleagues.

It is interesting to note that when examining the relations between job satisfaction and CWBs, only two facets of satisfaction reached statistical significance – Compensation and Promotion. Both facets of job satisfaction were weakly positively correlated with CWBs directed towards individuals. There is little research to draw on to aid in the interpretation of these results. One could speculate that perhaps organizations that offer attractive compensation and promotion packages also tend to be more competitive work environments that might indirectly reward deviant behaviours that allow one individual to succeed over another. That is, perhaps it was the individual's engagement in CWBs towards their colleagues that allowed them to get to a position where they are satisfied with their compensation and prospects for promotion. Again, more research is needed to test this hypothesis.

10.1.5.5 Commitment and Turnover

As hypothesized, global job satisfaction was found to be statistically significantly correlated with both affective and normative commitment towards one's organization

(H11a). In addition, the strength of these relations was found to be moderate. Since the compatibility principle would suggest that global job satisfaction and these mindsets of commitment are measured at the same level of specificity (Ajzen & Fishbein, 1977), predictions regarding differential correlations between the facets of satisfaction and commitment were not made. In general, LSA facets were found to display small-to-moderate correlations with both affective and normative commitment. The nature of these relations tended to be fairly consistent across commitment mindsets, with no distinct patterns of results emerging. For example, it was not the case that interpersonal facets of satisfaction such as Coworkers, Mentorship, or Supervision were more strongly correlated with affective commitment than normative. Rather, the results of the present study seemed to support the previous satisfaction – commitment literature, which is to say that there is a meaningful relation between the two job attitudes, but that having a greater understanding of the various areas of one's job that they are satisfied with provides little additional insight into their organizational commitment.

Based on previous meta-analytic findings, a moderate negative correlation was hypothesized between global job satisfaction and turnover intentions (Zimmerman, 2008). Although a negative correlation was observed in the present study, the magnitude of these relations was weaker than expected. Since few studies have explored the job satisfaction – turnover intentions link among leaders it is unknown whether these reduced correlations were due to sampling error or point to a meaningful difference in the relation between these constructs as it relates to leaders. For example, again drawing on the recent findings from Maltarich et al. (2010), perhaps the relation between job satisfaction and turnover intentions among leaders, who arguably occupy highly complex and cognitively

demanding positions, is impacted by other factors such as leader's cognitive ability. It could also be the case that contextual factors, like how close to retirement one is could impact the magnitude of the relations between job satisfaction and turnover intentions. Arguably, those who hold more senior positions in organizations may be further into their careers and closer to retirement. Consequently, they may be less likely to express turnover intentions, regardless of their level of satisfaction with their job (Lynn, Cao, & Horn, 1996). Evidently more research is needed to determine if the weak correlations observed in the present study are a result of sampling error, or reflect a meaningful departure from the established literature due to the nature of the sample being studied.

10.2 Limitations

10.2.1 Online Samples

It is unfortunate that one of the strengths of the present study – the diverse sample of leaders on which the LSA was created – also serves as one of its limitations. The recruitment of leaders via an online platform like MTurk allows for the collection of data from a wide variety of leaders with a diverse background of experiences that would otherwise be costly and time-consuming to collect (Paolacci & Chandler, 2014). However, there are several features associated with online data collection that can also be disadvantageous. In particular, there is no way to verify that the information provided by participants is true (Smith, Roster, Golden, & Albaum, 2016). Although several features that are discussed below were built into the administration of the present studies to lessen the likelihood that participants would be dishonest, there was no way to guarantee the veracity of responses.

Importantly, there was little motivation for leaders to lie about their work experience or to fake their responses in the present studies. All participants who

consented to participate were compensated regardless of their responses, and all data were collected anonymously. As such, there were no potential negative consequences to participants for presenting unflattering information about themselves or their employers.

It could be argued that participants might be motivated to lie about their leadership role in order to be eligible to participate in the study. To minimize this likelihood, specific eligibility criteria were not listed in the study recruitment materials. Potential participants were recruited for a study of job satisfaction and were told that they would need to pass screening questions to be eligible. Then, participants were only given one opportunity to answer these questions and if they did not meet eligibility based on their first set of responses they were not able to participate. In addition, while the studies were active on MTurk, a variety of online forums were monitored for any reference to eligibility criteria. This was not found to occur for either study, and as such it was unlikely that widespread dishonesty in eligibility responses was present in the data. Although this may help to increase confidence of the veracity of participants' responses in the present studies, it is not a substitute for collecting applied samples from known workplaces.

It should be noted that studies which employ real-world samples face their own sets of advantages and limitations. Not only can these types of studies be difficult, time-consuming, and costly to conduct, but there may be unique motivational factors at play that can impact the data. For example, when employees know their responses are being monitored and may be communicated to their superiors – even at the aggregate level – they may be motivated to downplay dissatisfaction or negative circumstances for fear of negative personal consequences. Consequently, although applied samples can offer many

advantages over online recruitment, an argument can be made that there is also a place for online samples in this type of research. In particular, for those situations where there is reason to suspect that employees may be motivated to distort responses based on perceived consequences for honesty, online samples may be important for providing corroborating evidence of key findings. As such, it is important to consider any future data collected from such real-world samples as complementary rather than superior to the data collected from leaders recruited online (Buhrmester et al., 2011; Rouse, 2015).

10.2.2 Unreliability in the Data

Another concern with data collected from online samples is the degree to which individuals are attentive while responding to materials. Several researchers have questioned participant attentiveness on MTurk (Rouse, 2015), but the prevailing conclusion has been that it is possible to obtain data from online samples that is as reliable as data obtained from university undergraduate students (Buhrmester et al., 2011; Paolacci & Chandler, 2014). In order to identify the presence of careless responding in the data, several directed response items were administered throughout the study materials. Although this seemed to identify careless responders in one MTurk sample, there was evidence to suggest severe levels of unreliability in the data obtained from a second sample.

As documented in greater detail in Appendix E, several steps were taken to identify the source of this unreliability. These steps included setting stricter criteria for directed response items and duplicated cases, verifying eligibility with work experience, examining the validity of responses to open-ended questions, identifying multivariate outliers, and computing an index of within-person response consistency. The combined efforts of these approaches made it possible to extract a reduced sample which met

acceptable psychometric standards of reliability for all measures that were ultimately included in analyses. However, it is a major limitation of this study that such a large portion of the data needed to be removed, and that even by doing so some variables still had to be dropped from planned analyses entirely.

Knowing that varying levels of attentiveness was a concern in the second survey sample, analyses were presented at two levels of reliability. As discussed by Berinksy et al. (2014) this approach can help to balance the internal reliability and validity that comes with a reduced, attentive sample, with the external validity and generalizability that is associated with a larger sample. Importantly, the nature of the results did not vary substantially between the full and reduced sample across a variety of analyses (e.g., confirmatory factor analyses, descriptive statistics, zero-order and partial correlations, moderation analyses). These results suggested the stability of the nature of the findings despite the presence of some unreliable responding. Therefore, the results obtained from this second survey sample can serve as preliminary validation evidence for the LSA-Extended. However, it will be important for future investigations of leader job satisfaction to replicate these findings in more reliable and stable samples.

10.2.3 Common Method Variance

An important limitation of the current dissertation comes from the fact that across all samples, only self-reported data were collected. As such, there was the potential that CMV positively biased the association between reported variables (Spector, Rosen, Richardson, Williams, & Johnson, 2019). However, this limitation was known before data collection began. As such, a priori methodological design choices were made to ameliorate the effects of CMV.

First, the inclusion of variables in the validation of the LSA was carefully considered. Constructs that were most appropriately measured with self-report (e.g., cognitive ability, commitment, turnover intentions) were intentionally chosen for validation purposes. Those constructs that were most at risk of being inflated when assessed via self-reports (e.g., performance) were not included in the validation of the LSA (Lindell & Whitney, 2001). The decision to examine validation evidence of the LSA using only those constructs that were most appropriately measured by self-reports limited the nature of relations that could be explored, but in doing so minimized the likelihood that CMV would impact observed relations.

Second, only those constructs within the nomological network of job satisfaction for which there was substantial documented empirical findings were included in the examination of validation evidence. Wherever possible, the most popular and highly-researched measures were selected for each of these constructs (e.g., RSES). Limiting validation to these well-researched measures meant that for all tested hypotheses, the nature of associations in the present study could be compared to meta-analytic findings in the literature. As such, any deviation in the magnitude of relations between the present study and meta-analytic results could be used as an indication of the extent to which CMV or other sampling error variance impacted the results.

Last, all data in the present study were collected anonymously. As previously discussed, this likely meant there was little motivation for leaders to fake or respond dishonestly when completing the survey materials. As such, it was unlikely that social desirability bias would dramatically impact the results. Taken together, the

implementation of these study design choices made it unlikely that the data in the present study were vulnerable to CMV.

In addition to the procedural CMV controls advocated by Conway and Lance (2010), post-hoc statistical controls were also employed as a part of the current dissertation. In particular, Lindell and Whitney's (2001) correlation-based marker variable technique was used, wherein all zero-order correlations between LSA job satisfaction and criterion variables of interest were adjusted to account for CMV effects. The degree of adjustment was determined by examining the correlation between all variables and a theoretically unrelated marker variable – Aesthetic Appreciation. The resultant partial correlations that were obtained after marker-variable adjustments were made were then tested for statistical significance. Interpretation of these partial correlations allowed for a more conservative examination of validation evidence for the LSA and it was the implications of these findings that were discussed.

Despite these procedural and statistical controls for CMV, it is important to note a second limitation of the measures included in this dissertation. Each of the correlates examined as part of the validation of the LSA have demonstrated robust relations with job satisfaction in the literature. However, the constructs were self-referential and were not specific to leadership behaviour or leader-relevant outcomes. Given that one of the proposed strengths of the LSA is its capacity to assess the unique experiences of leaders, it will be important for future researchers to examine validation evidence of leader-specific facets with leader-relevant outcomes such as follower performance (Wang & Howell, 2012), leader identification (Kark, Shamir, & Chen, 2003), and follower-rated transformational leadership (Rafferty & Griffin, 2004).

10.2.4 Multiple Tests of Significance

Throughout this dissertation several tests of statistical significance were conducted. In particular, due to the breadth of coverage of the LSA, several hypotheses and research questions were examined as part of the validation of the measures. When conducting a large number of significance tests the inflation of Type I error rates is a concern. Common practice in such cases has typically been to control the familywise error rate by adjusting p-values using a correction method such as the Bonferroni correction (Aron, Coups, & Aron, 2012). However, these corrections have been criticized for being overly conservative and may lead to increases in Type II errors, particularly as the number of significance tests increase (Streiner & Norman, 2011).

The current dissertation sought to examine a relatively unexplored area of research, namely the job satisfaction of workplace leaders. It could be argued that the risks associated with committing a Type II at the beginning stages of a program of research are greater than the risks associated with committing a Type I error (Rothman, 1990). That is to say, a lack of significant results early on might be taken as an indication that the area of research is not worth pursuing. This in turn could mean that a potentially important and meaningful program of research may never be followed. In contrast, Type I errors committed in the early stages of research are likely to be borne out in subsequent replication attempts.

For these reasons, the decision was made not to apply a Bonferroni correction as part of the analyses conducted in this dissertation. Although there are reasons to support this decision, it is important to recognize that concerns of capitalizing on chance due to fact that multiple tests of comparisons were conducted remains a limitation of this

dissertation. Previous calls for additional research and replication with independent samples are echoed here to help ameliorate these concerns.

10.3 Future Directions

This dissertation was the first known systematic investigation of the nature of job satisfaction among leaders in the workplace. As a relatively novel area of study, an important first step was ensuring that there was an instrument that could be used to measure leader satisfaction reliably and validly. To that end, two versions of the LSA were created (i.e., Extended and Brief) so that the measure could be used in a variety of applications.

The validation evidence reported in this dissertation was an important first step in establishing the utility of the measures. However, it will be critically important for additional research to be conducted on the validity of both the LSA-Extended and LSA-Brief, especially in light of the issues of data reliability reported for Survey Sample 2. Such investigations might include, but not be limited to, exploring the stability of the measures over time, examining how facets of leader satisfaction are associated with performance, and determining whether facets of the LSA are able to add incremental predictive validity to relevant outcomes over existing measure of satisfaction (e.g., satisfaction with mentorship and follower performance).

The proper validation of any new instrument is a multi-study, multi-sample endeavor that takes the efforts of multiple research teams. As no other measure of leader job satisfaction seems to exist at the level of specificity of the LSA, coordinated efforts to validate the instruments are an important step for those interested in exploring the nature of job satisfaction among this distinct group of employees.

It will also be important for researchers to further examine how the various components of the nomological network are related to one another. Structural equation modeling may be a useful approach for testing several of the relations that have been theorized between individual differences, job attitudes, and workplace behaviours. For example, dispositional factors such as core self-evaluations and cognitive ability may be expected to positively predict job satisfaction and organizational commitment, which in turn positively impact engagement in OCBs and negatively predict deviant behaviours and turnover intentions. Structural equation modeling was beyond the scope of the current dissertation due to an insufficient sample size, but this technique would allow future researchers to examine the magnitude of these direct effects, and to compare them against models that add EI or other contextual variables as mediators and moderators of these relations.

Once sufficient validation evidence has been assembled for the LSA-Extended and Brief, there are several possible applications of the instruments in both research and practice. For example, a preponderance of research using the Leader-Member Exchange (LMX) framework tends to focus on the impact leaders' behaviour has on their followers' performance or satisfaction (Martin, Guillaume, Thomas, Lee, & Epitropaki, 2016). The development of the LSA would allow for many of these models to be expanded by examining evidence for an inverse relationship by asking: How does follower behaviour impact leader satisfaction? Then, more complex reciprocal relationships could be examined to gain a greater understanding of the microdynamics of leader-follow relationships.

In practice, one possible implementation of the LSA could be to help increase the efficacy of leader development programs. Every year an estimated $14 billion dollars are spent on leadership development programs in the United States (Gurdjian, Halbeisen, & Lane, 2014), and one 2017 survey reported that an estimated 8% of organizations spent more than $10 000 per year per person on leadership development, with 6% of companies spending between $7 000 and $10 000 (Prokopeak, 2018). If making such a large investment in the future of their leadership, it is undoubtable that organizations will want to be sure they get the most possible from these programs. Having a greater understanding of the context in which the leader operates and how their perceptions of their environment can impact their attitudes might be a meaningful factor that has been relatively overlooked when examining the utility of these leader development programs. One could argue that knowing whether a leader feels they have the resources they need, or that they don't think their ideas are being listening to, or that their efforts are going unrecognized, is important information to have when examining leaders' commitment to development programs. Having this information early in the process could go a long way towards identifying potential issues and taking the steps necessary to remedy them so that the experience can be as positive and rewarding as possible for both leaders and organizations alike.

10.4 Conclusion

Over the past several decades, job satisfaction has remained one of the most frequently studied constructs in the I/O domain (Spector, 1997). Despite this fact, little research has been conducted on how job satisfaction is experienced by those who hold leadership positions within organizations. This dissertation was an important first step in addressing this gap in the literature that led to the creation of two measures of leader job

satisfaction – one that offers concise measurement and the other that provides a more statistically robust assessment of satisfaction. Together, the LSA measures have the potential to provide efficient measurement solutions to both researchers and practitioners. The preliminary validation evidence examined as part of this dissertation provides reasons for those who are interested in studying leader's job satisfaction to be optimistic. That said, more work is needed to examine the utility of the LSA-Extended and LSA-Brief for future research.

References

Ajzen, I., & Fishbein, M. (1977). Attitude-behavior relations: A theoretical analysis and review of empirical research. *Psychological Bulletin, 84*, 888-918. doi:10.1037/0033-2909.84.5.888

Aldag, R. J., & Brief, A. P. (1978). Examination of alternative models of job satisfaction. *Human Relations, 31*, 91-98. doi:10.1177/001872677803100106

Allen, N., & Meyer, J. (1990). The measurement and antecedents of affective, continuance and normative commitment to the organization. *Journal of Occupational Psychology, 63*, 1-18. doi:10.1111/j.2044-8325.1990.tb00506.x

Aron, A., Coups, E. J., & Aron, E. N. (2012). *Statistics for Psychology* (6th ed.). Upper Saddle River, NJ: Pearson Education.

Arvey, R., Bouchard, T. J., Segal, N., & Abraham, L. (1989). Job satisfaction: Environmental and genetic components. *Journal of Applied Psychology, 74*, 187-192. doi:10.1037/0021-9010.74.2.187

Arvey, R., McCall, B., Bouchard, T. J., Taubman, P., & Cavanaugh, M. (1994). Genetic influences on job satisfaction and work values. *Personality and Individual Differences, 17*, 21-33. doi:10.1016/0191-8869(94)90258-5

Ashton, M. C., & Lee, K. (2005). Honesty-Humility, the Big Five, and the Five-Factor Model. *Journal of Personality, 73*, 1321-1354. doi:10.1111/j.1467-6494.2005.00351.x

Ashton, M. C., & Lee, K. (2008). The prediction of Honesty-Humility-related criteria by the HEXACO and Five-Factor models of personality. *Journal of Research in Personality, 42*, 1216-1228. doi:10.1016/j.jrp.2008.03.006

Ashton, M. C., & Lee, K. (2009). The HEXACO-60: A short measure of the major dimensions of personality. *Journal of Personality Assessment, 91*, 340-345. doi:10.1080/00223890902935878

Asparouhov, T., & Muthen, B. (2009). Exploratory structural equation modeling. *Structural Equation Modeling: A Multidisciplinary Journal, 16*, 397-438. doi:10.1080/10705510903008204

Bai, H. (2018, August 8). Evidence that a large amount of low quality responses on MTurk can be detected with repeated GPS coordinates. Retrieved from https://www.maxhuibai.com/blog/evidence-that-responses-from-repeating-gps-are-random

Barford, K., & Smilie, L. (2016). Openness and other Big Five traits in relation to dispositional mixed emotions. *Personality and Individual Differences, 102*, 118-122. doi:10.1016/j.paid,2016.07.002

Behson, S., Eddy, E., & Loresnzet, S. (2000). The importance of the critical psychological states in the Job Characteristiscs Model: A meta-analysis and structural equations modeling examination. *Current Research in Social Psychology, 5*, 170-189.

Bennett, R. J., & Robinson, S. L. (2000). Development of a Measure of Workplace Deviance. *Journal of Applied Psychology, 85*, 349-360. doi:10.1037//021-9010.85.3.349

Berinksy, A. J., Margolis, M. F., & Sances, M. W. (2014). Separating the shirkers from the workers? Making sure respondents pay attention on self-adminsitered surveys. *American Journal of Political Science, 58*, 739-753. doi:10.1111/ajps.12081

Blasberg, S., Rogers, K., & Paulhus, D. (2013). The Bidimensional Impression Management Index (BIMI): Measuring agentic and communal forms of impression management. *Journal of Personality Assessment, 96*, 523-531. doi:10.1080/00223891.2013.862252

Bowling, N. A., Wagner, S. H., & Beehr, T. A. (2018). The Facet Satisfaction Scale: An effective affective measure of job satisfaction facets. *Journal of Business Psychology, 33*, 383-403. doi:10.1007/s10869-017-9499-4

Brief, A. (1998). *Attitudes in and around organizations.* Thousand Oaks, CA: Sage.

Brod, M., Tesler, L., & Christensen, T. (2009). Qualitative research and content validity: Developing best practices based on science and experience. *Quality of Life Researc, 18,* 1263-1278. doi:10.1007/s11136-009-9540-9

Browne, M., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. Bollen, & J. Long, *Testing structural equation models* (pp. 136-162). Newbury Park, CA: Sage.

Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on Psychological Science, 6,* 3-5. doi:10.1177/11745691610393980

Byrne, A., & Eysenck, M. (1993). Individual differences in positive and negative interpretive biases. *Personality and Individual Differences, 14,* 849-851. doi:10.1016/0191-8869(93)90100-H

Cammann, C., Fichman, M., Jenkins, D., & Klesh, J. (1979). The Michigan Organizational Assessment Questionnaire. *Unpublished manuscript*. University of Michigan, Ann Arbor.

Chen, F. (2007). Sensitivity of goodness of fit indexes to lack of measurement invariance. *Structural Equation Modeling: A Multidisciplinary Journal, 14,* 464-504. doi:10.1080/10705510701301834

Cohen, J., & Cohen, P. (1975). *Applied multiple regression/correlation analysis for the behavioral sciences.* Hillsdale, NJ: Erlbaum.

Condon, D., & Revelle, W. (2014). International Cognitive Ability Resource 16-item Sample Test. Retrieved from https://icar-project.com/

Connolly, J., & Viswesvaran, C. (2000). The role of affectivity in job satisfaction: A meta-analysis. *Personality and Individual Differences, 29,* 265-281. doi:10.1016/S0191-8869(99)00192-0

Conway, J. M., & Lance, C. E. (2010). What reviewers should expect from authors regarding common method bias in organizational research. *Journal of Business Psychology, 25,* 325-334. doi:10.10007/s10869-010-9181-6

Costa, P. T., & McCrae, R. R. (1992). *NEO-PI-R Professional Manual-Revised NEO Personaity Inventory (NEO-PIR) and NEO Five-Factor Inventory (NEO-FFI).* Odessa, Florida: Psychological Assessment Resources.

Côté, S. (1999). Affect and performance in organizational settings. *Current Directions in Psychological Science, 8,* 65-68. doi:10.1111/1467-8721.00016

Crede, M., Chernyshenko, O. S., Stark, S., Dalal, R. S., & Bashshur, M. (2007). Job satisfaction as mediator: An assessment of job satisfaction's position within the nomological network. *Journal of Occupational and Organizational Psychology, 80,* 515-538.

Dalal, R. S. (2005). A meta-analysis of the relationship between organizational citizenship behavior and counterproductive work behavior. *Journal of Applied Psychology, 90,* 1241-1255.

Dawis, R. (2004). *Comprehensive handbook of psychological assessment* (Vol. 4). (M. Hersen, Ed.) Hoboken, NJ: John Wiley & Sons, Inc.

DeNeve, K., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin, 124,* 197-229. doi:10.1037/0033-2909.124.2.197

Dennis, S.A., Goodson, B.M., & Pearson, C. (in press). Online worker fraud and evolving threats to the integrity of MTurk data: A discussion of virtual private servers and the limitations of IP-based screening procedures. *Behavioral Research in Accounting*. Retrieved from https://ssrn.com/abstract=3233954.

DeShon, R.P., & Gillespie, J.Z. (2005). A motivated action theory account of goal orientation. *Journal of Applied Psychology, 90,* 1096-1127. doi: 10.1037/0021-9010.90.06.1096

DiStefano, C., Liu, J., Jiang, N., & Shi, D. (2018). Examination of the Weighted Root Mean Square Residual: Evidence for trustworthiness? *Structural Equation Modeling: A Multidisciplinary Journal, 25*, 453-466. doi:10.1080/10705511.2017.1390394

Dorman, C., & Zapf, D. (2001). Job satisfaction: A meta-analysis of stabilities. *Journal of Organizational Behavior, 22*, 483-504. doi:10.1002/job.098

Dreher, G. F., & Bretz, R. D. (1991). Cognitive ability and career attainment: Moderating effects of early career success. *Journal of Applied Psychology, 76*, 392-397.

Dreyfuss, E. (2018, August 17). A bot panic hits Amazon's Mechanical Turk. Retrieved from https://www.wired.com/story/amazon-mechanical-turk-bot-panic/

Dudley, N., Orvis, K., Lebiecki, J., & Cortina, J. (2006). A meta-analytic investigation of conscientiousness in the prediction of job performance: Examining the intercorrelations and the incremental validity of narrow traits. *Journal of Applied Psychology, 91*, 40-57. doi:10.1037/0021-9010.91.1.40

Dunham, R. B. (1976). The measurement and dimensionality of job characteristics. *Journal of Applied Psychology, 61*, 404-409.

Espinoza, J. A., Meyer, J. P., Anderson, B. K., Vaters, C., & Politis, C. (2018). Evidence for a bifactor structure of the Scales of Psychological Well-Being using exploratory structural equation modeling. *Journal of Well-Being Assessment, 2*, 21-40. doi:10.1007/s41543-018-0008-y

Faul, F. (1992-2019). G*Power Version 3.1.9.4. Germany: Universitat Kiel.

Ferratt, T. (1981). Overall job satisfaction: Is it a linear function of facet satisfaction? *Human Relations*, 463-473. doi:10.1177/001872678103400603

Flamer, S. (1983). Assessment of the multitrait-multimethod matrix validity of Likert scales via confirmatory factor analysis. *Multivariate Behavioral Research, 18*, 275-308. doi:10.1207/s15327906mbr1803_3

Fried, Y., & Ferris, G. (1987). The validity of the Job Characteristics Model: A review and meta-analysis. *Personnel Psychology, 40*, 287-322. doi:10.1111/j.1744-6570.1987.tb00605.x

Gignac, G.E. (2014). On the inappropriateness of using items to calculate total scale score reliability via coefficient alpha for multidimensional scales. *European Journal of Psychological Assessment, 30*, 130-139. doi: 10.1027/1015-5759/a000181

Gillet, B., & Schwab, D. P. (1975). Convergent and discriminant validties of corresponding Job Descriptive Index and Minnesota Satisfaction Questionnaire scales. *Journal of Applied Psychology, 60*, 313-317. doi:10.1037/h0076751

Golnaz, S. (2012). Emotional intelligence and leadership development. *Public Personnel Management, 41*, 535-548. doi:10.1177/009102601204100308

Gonzalez-Mule, E., Carter, K. M., & Mount, M. K. (2017). Are smarter people happier? Meta-analyses of the relationships between general mental ability and job and life satisfaction. *Journal of Vocational Behavior, 99*, 146-164. doi:10.1016/j.jvb.2017.01.003

Gouldner, A. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review, 25*, 161-178.

Green, S.B., & Yang, Y. (2015). Evaluation of dimensionality in the assessement of internal consistency reliability: Coefficient alpha and omega coefficients. *Educational Measurement: Issues and Practice, 34*, 14-20. doi: 10.111/emip.12100

Gregson, T. (1987). Factor analysis of a multiple-choice format for job satisfaction. *Psychological Reports, 61*, 747-750.

Gurdjian, P., Halbeisen, T., & Lane, K. (2014, January). *Why leadership development programs fail*. Retrieved from McKinsey Quarterly: https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Leading%20in%20the%2021st%20Century/Why%20leadership%20development%20programs%20fail/Why%20leadership%20development%20programs%20fail.ashx

Hackman, J. R., & Oldham, G. R. (1975). Development of the Job Diagnostic Survey. *Journal of Applied Psychology, 60,* 159-170. doi:10.1037/h0076546

Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance, 16,* 250-279. doi:10.1016/0030-5073(76)90016-7

Hancer, M., & George, R. T. (2003). Job satisfaction of restaurant employees: An empirical investigation using the Minnesota Satisfaction Questionnaire. *Journal of Hospitality & Tourism Research, 27,* 85-100. doi:10.1177/1096348002238882

Hancer, M., & George, R. T. (2004). Factor structure of the Minnesota Satisfaction Questionnaire short form for restaurant employees'. *Psychological Reports, 94,* 357-362. doi:10.2466/pr0.94.1.357-362

Harris, K., & Vazire, S. (2016). On friendship development and the Big Five personality traits. *Social and Personality Psychology Compass, 10,* 647-667. doi: 10.1111/spc3.12287

Harter, S. (1990). Causes, correlates, and the functional role of global self-worth: A life-span perspective. In R.J. Sternberg & J. Kolligan, Jr. (Eds.), *Competence considered* (pp. 67-97). New Haven, CT: Yale University Press.

Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd ed.). New York, NY: Guilford Press.

Heritage, B., Pollock, C., & Roberts, L. (2015). Confirmatory factor analysis of Warr, Cook and Wall's (1979) Job Satisfaction Scale. *Australian Psychologist, 50,* 122-129. doi:10.1111/ap.12103

Herzberg, F., Mausner, B., & Snyderman, B. (1959). *The motivation to work.* New York, NY: John Wiley & Sons.

Heywood, H. (1931). On finite sequences of real numbers. *Proceedings of the Royal Society of London. Series A, Containing Papers of a Mathematical and Physical Character, 134,* 486-501. doi:10.1098/rspa.1931.0209

Highhouse, S., & Becker, A. S. (1993). Facet measures and global job satisfaction. *Journal of Business and Psychology, 8,* 117-127. doi:10.1007/BF02230397

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational Research Methods, 1,* 104-121. doi:10.1177/109442819800100106

Hodzic, S., Scharfen, J., Ripoll, P., Holling, H., & Zenasni, F. (2018). How efficient are emotionall intelligence trainings: A meta-analysis. *Emotion Review, 10,* 138-148. doi:10.1177/1754073917708613

Hom, P. W., Lee, T. W., Shaw, J. D., & Hausknecht, J. P. (2017). One hundred years of employee turnover theory and research. *Journal of Applied Psychology, 102,* 530-545. doi:10.1037/ap10000103

Hu, L., & Bentler, P. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6,* 1-55. doi:10.1080/107-5519909540118

Huang, C., & Dong, N. (2012). Factor structure of the Rosenberg Self-Esteem Scale. *European Journal of Psychological Assessment, 28,* 132-138. doi:10.1027/1015-5759/a000101

Hulin, C. L. (1991). Adaptation, persistence, and commitment in organizations. In M. D. Dunnette, & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. 2, pp. 445-505). Palo Alto, California: Consulting Psychologists Press.

Hunter, J. E. (1986). Cognitive ability, cognitive aptitudes, job knowledge, and job performance. *Journal of Vocational Behavior, 29,* 340-362. doi:10.1016/0001-8791(86)90013-8

Hunter, J. E., & Schmidt, F. L. (1990). *Methods of meta-analysis.* Newbury Park, California: Sage.

Iaffaldano, M. T., & Muchinsky, P. M. (1985). Job satisfaction and job performance: A meta-analysis. *Psychological Bulletin, 96,* 72-98. doi:10.1037/0033-2909.97.2.251

Ilies, R., Fulmer, I. S., Spitzmuller, M., & Johnson, M. D. (2009). Personality and citizenship behavior: The mediating role of job satisfaction. *Journal of Applied Psychology, 94,* 945-959. doi:10.1037/a0013329

Ironson, G. H., Smith, P. C., Brannick, M. T., Gibson, W. M., & Paul, K. B. (1989). Construction of a Job in General scale: A comparison of global, composite, and specific measures. *Journal of Applied Psychology, 74,* 193-200. doi:10.1037/0021-9010.74.2.193

Jackson, C. J., & Corr, P. J. (2002). Global job satisfaction and facet description: The moderating role of facet importance. *European Journal of Psychological Assessment, 18,* 1-8. doi:10.1027//1015-5759.18.1.1

Jackson, D. N. (1971). The dynamics of structured personality tests: 1971. *Psychological Review, 78,* 229-248. doi:10.1037/h0030852

Jackson, D. N. (1984). Personality Research Form [Technical Manual]. Port Huron, MI: Sigma Assessment Systems, Inc.

Jelley, R. B., & Goffin, R. D. (2001). Can performance-feedback accuracy be improved? Effects of rater priming and rating-scale format on rating accuracy. *Journal of Applied Psychology, 86,* 134-144. doi:10/1037//0021-9010.86.1.134

Jensen-Campbell, L. A., Knack, J. M., & Gomez, H. L. (2010). The psychology of nice people. *Social and Personality Psychology Compass, 4*, 1042-1056. doi: 10.1111/j.1751-9004.2010.00307.x

Judge, T. A., & Bono, J. E. (2001). Relationship of core self-evaluations traits - self-esteem, generalized self-efficacy, locus of control, and emotional stability - with job satisfaction and job performance: A meta-analysis. *Journal of Applied Psychology, 86*, 80-92. doi:10.1037//0021-9010.86.1.80

Judge, T. A., Heller, D., & Klinger, R. (2008). The dispositional sources of job satisfaction: A comparative test. *Applied Psychology, 57*, 361-372. doi:10.1111/j.1464-0597.2007.00318.x

Judge, T. A., Heller, D., & Mount, M. K. (2002). Five-Factor Model of personality and job satisfaction: A meta-analysis. *Journal of Applied Psychology, 87*, 530-541. doi:10.1037//0021-9010.87.3.530

Judge, T. A., & Locke, E. A. (1993). Effect of dysfunctional thought processes on subjective well-being and job satisfaction. *Journal of Applied Psychology, 78*, 475-490.

Judge, T. A., Locke, E. A., & Durham, C. C. (1997). The dispositional causes of job satisfaction: A core evaluations approach. *Research in Organizational Behavior, 19*, 151-188.

Judge, T. A., Locke, E. A., Durham, C. C., & Kluger, A. N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. *Journal of Applied Psychology, 83*, 17-34. doi:10.1037/0021-9010.83.1.17

Judge, T. A., Thoresen, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfaction-job performance relationship: A qualitative and quantitative review. *Psychological Bulletin, 127*, 376-407. doi:10.1037//003-2909.127.3.376

Judge, T.A., & Kammeyer-Mueller, J. (2012). Job attitudes. *Annual Review of Psychology, 63*, 341-367. doi:10.1146/annurev-psych-120710-100511

Judge, T.A., Scott, B., & Ilies, R. (2006). Hostility, job attitudes, and workplace deviance: Test of a multi-level model. *Journal of Applied Psychology, 91,* 126-138.

Judge, T. A., Weiss, H.M., Kammeyer-Mueller, J. D., & Hulin, C. L. (2017). Job attitudes, job satisfaction, and job affect: A century of continuity and of change. *Journal of Applied Psychology, 102,* 356-374. doi:10.1037/ap10000181

Karabell, S. (2015, June 19). *Corruption 101: The dark side of leadership*. Retrieved from Forbes: www.forbes.com/sites/shelliekarabell/2015/06/19/corruption-101-the-dark-side-of-leadership/#750c9e59480c

Kark, R., Shamir, B., & Chen, G. (2003). The two faces of transformational leadership: Empowerment and dependency. *Journal of Applied Psychology, 88,* 246-255. doi: 10.1037/0021-9010.88.2.246

Kenny, D. A. (2015, November 24). *Measuring model fit*. Retrieved from http://davidakenny.net/cm/fit.htm

Kinicki, A. J., McKee-Ryan, F. M., Schriesheim, C. A., & Carson, K. P. (2002). Assessing the construct validity of the Job Descriptive Index: A review and meta-analysis. *Journal of Applied Psychology, 87,* 14-32. doi:10.1037//0021-9010.87.1.14

Kline, P. (2000). *The handbook of psychological testing* (2nd ed.). London: Routledge.

Kline, R. B. (2015). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford Press.

Kunin, T. (1955). The construction of a new type of attitude measure. *Personnel Psychology, 8,* 65-77. doi:10.1111/j.1744-6570.1955.tb01189.x

Lane, S., Raymond, M. R., & Haladyna, T. M. (2016). *Handbook of test development* (2nd ed.). New York, NY: Routledge.

Law, K., Wong, C., & Song, L. (2004). The construct and criterion validity of emotional intelligence and its potential utility for management studies. *Journal of Applied Psychology, 89*, 483-496. doi:10.1037/0021-9010.89.3.483

Lee, K., & Ashton, M. C. (2004). Psychometric properties of the HEXACO personality inventory. *Multivariate Behavioral Research, 39*, 329-358. doi:10.1207/s15327906mbr3902_8

Lee, K., Ashton, M. C., & Shin, K.-H. (2005). Personality correlates of workplace anti-social behavior. *Applied Psychology, 54*, 81-98. doi:10.1111/j.1464-0597.2005.00197.x

Lee, R., & Wilbur, E. R. (1985). Age, education, job tenure, salary, job characteristics, and job satisfaction: A multivariate analysis. *Human Relations, 38*, 781-791. doi:10.1177/001872678503800806

Lee, T., & Mitchell, T. (1994). An alternative approach: The unfolding model of voluntary employee turnover. *The Academy of Management Review, 19*, 51-89.

Levin, I., & Stokes, J. P. (1989). Dispositional approach to job satisfaction: Role of negative affectivity. *Journal of Applied Psychology, 74*, 752-758. doi:10.1037/0021-9010.74.4.752

Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology, 86*, 114-121. doi:10.1037//0021-9010.86.1.114

Litman, L., Robinson, Y., Moss, A.J., & Gautam, R. (2018, September 18). After the bot scare: Understanding what's been happening with data collection on MTurk and how to stop it. Retrieved from https://www.cloudresearch.com /resources/blog/after-the-bot-scare-understanding-whats-been-happening-with-data-collection-on-mturk-and-how-to-stop-it/

Locke, E. A. (1969). What is job satisfaction? *Organizational Behavior and Human Performance, 4*, 309-336. doi:10.1016/0030-5073(69)90013-0

Locke, E. A. (1976). *Handbook of industrial and organizational psychology.* (M. Dunnette, Ed.) Chicago: Rand McNally.

Loher, B. T., Noe, R. A., Moeller, N. L., & Fitzgerald, M. P. (1985). A meta-analysis of the relation of job characteristics to job satisfaction. *Journal of Applied Psychology, 70*, 280-289. doi:10.1037/0021-9010.70.2.280

Lynn, S. A., Cao, L. T., & Horn, B. C. (1996). The influence of career stage on the work attitudes of male and female accounting professionals. *Journal of Organizational Behavior, 17*, 135-149. doi:10.1002/(SICI)1099-1379(199603)17:23.0CO;2-V

Magnus, K., Diener, E., Fujita, F., & Pavot, W. (1993). Extraversion and Neuroticism as predictors of objective life events: A longitudinal analysis. *Journal of Personality and Social Psychology, 65*, 1046-1053. doi: 10.1037/0022-3514.65.5.1046

Maltarich, M. A., Nyberg, A. J., & Reilly, G. (2010). A conceptual and empirical analysis of the cognitive ability-volunatry turnover relationship. *Journal of Applied Psychology, 95*, 1058-1070. doi:10.1037/a0020331

Markon, K. E. (2019). Bifactor and hierarchical models: Specification, inference, and interpretation. *Annual Review of Clinical Psychology*, 51-69. doi:10.1146/annurev-clinpsy-050718-095522

Marsh, H. W., Morin, A. J., Parker, P. D., & Kaur, G. (2014). Exploratory structural equation modeling: An integration of the best features of exploratory and confirmatory factor analysis. *Annual Review of Cliniccal Psychology, 10*, 85-110. doi:10.1146/annurev-clinpsy-032813-153700

Martin, R., Guillaume, Y., Thomas, G., Lee, A., & Epitropaki, O. (2016). Leader-member exchange (LMX) and performance: A meta-analytic review. *Personnel Psychology, 67-121,* 67-121. doi:10.1111/peps.12100

Mathieu, C., Fabi, B., Lacoursière, R., & Raymond, L. (2016). The role of supervisory behavior, job satisfaction and organizational commitment on employee turnover. *Journal of Management and Organization, 22,* 113-129. doi:10.1017/jmo.2015.25

Mathieu, J. E., & Zajac, D. M. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin, 108,* 171-194. doi:10.1037/0033-2909.108.2.171

McCormic, E., Jeanneret, P., & Mecham, R. (1972). A study of job characteristics and job dimensions as based on the position analysis questionnaire. *Journal of Applied Psychology, 56,* 347-368. doi:10.1037/h0033099

McEvoy, G. M., & Cascio, W. F. (1985). Strategies for reducing employee turnover: A meta-analysis. *Journal of Applied Psychology, 70,* 342-353. doi:10.1037/0021-9010.70.2.342

McIntyre, S. E., & McIntyre, T. M. (2010). Measuring job satisfaction in Portuguese health professionals: Correlates and validation of the Job Descriptive Index and the Job in General Scale. *International Journal of Selection and Assessment, 18,* 426-431. doi:10.1111/j.1468-2389.2010.00524.x

Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods, 17,* 437-455. doi:10.1037/a0028085

Meyer, J. P., & Allen, N. J. (1991). A three-component conceptualization of organizational commitment. *Human Resource Management Review, 1,* 61-89. doi:10.1016/1053-4822(91)90011-Z

Meyer, J. P., Allen, N. J., & Smith, C. A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology, 78,* 538-551. doi:10.1037/0021-9010.78.4.538

Meyer, J. P., Stanley, D. J., Herscovitch, L., & Topolnytsky, L. (2002). Affective, continuance, and normative commitment to the organization: A meta-analysis of

antecedents, correlates, and consequences. *Journal of Vocational Behavior, 61,* 20-52. doi:10.1006/jvbe.2001.1842

Miao, C., Humphrey, R. H., & Qian, S. (2017). A meta-analysis of emotional intelligence and work attitudes. *Journal of Occupational and Organizational Psychology, 90,* 177-202. doi:10.1111/joop.12167

Mikolajczak, M., Roy, E., Luminet, O., Fillee, C., & de Timary, P. (2007). The moderating impact of emotional intelligence on free cortisol responses to stress. *Psychoneuroendocrinology, 32,* 1000-1012. doi:10.1016/j.psyneuen.2007.07.009

Minnesota Satisfaction Questionnaire. (2016). Retrieved from The University of Minnesota: http://vpr.psych.umn.edu/instruments/msq-minnesota-satisfaction-questionnaire

Mobley, W. (1977). Intermediate linkages in the relationship between job satisfaction and employee turnover. *Journal of Applied Psychology, 62,* 237-240. doi:10.1037/0021-9010.62.2.237

Morin, A. J., & Asparouhov, T. (2018). Estimation of hierarchical Exploratory Structural Equation Model (ESEM) using ESEM-within-CFA. Montreal, QC: Substantive Methodological Synergy Research Laboratory.

Morin, A., Arens, A., & Marsh, H. (2016). A bifactor exploratory structural equation modeling framework for the identification of distinct sources of construct-relevant psychometric multidimensionality. *Structural Equation Modeling: A Multidisciplinary Journal, 23,* 116-139. doi:10.1080/10705511.2014.961800

Moshagen, M., & Musch, J. (2014). Sample size requirements of the robust weighted least squares estimator. *Methodology, 10,* 60-70. doi:10.1027/1614-2241/a000068

Mount, M., Ilies, R., & Johnson, E. (2006). Relationship of personality traits and counterproductive work behaviors: The mediating effects of job satisfaction. *Personnel Psychology, 59,* 591-622.

Murphy, K. R., & Davidshofer, C. O. (2001). *Psychological testing: Principles and applications.* Englewood Cliffs, NJ: Prentice Hall.

Murphy, K. R., & Davidshofer, C. O. (2005). *Psychological testing: Principles and applications* (6th ed.). Upper Saddle River, NJ: Pearson/Prentice Hall.

Murray, H. (1938). *Explorations in personality.* New York, NY: Oxford University Press.

Muthén, L. K., & Muthén, B. O. (1998-2012). Mplus User's Guide. Seventh Edition. Los Angeles, CA: Muthén & Muthén.

Nagy, M. S. (2002). Using a single-item approach to measure facet job satisfaction. *Journal of Occupational and Organizational Psychology, 75*, 77-86. doi:10.1348/096317902167658

O'Connor, E. J., Peters, L. H., & Gordon, S. M. (1978). The measurement of job satisfaction: Current practices and future considerations. *Journal of Management, 4*, 17-26. doi:10.1177/014920637800400202

O'Neill, T., Lewis, R. J., & Carswell, J. J. (2011). Employee personality, justice perceptions, and prediction of workplace deviance. *Personality and Individual Differences, 51*, 595-600. doi:10.1016/j.paid.2011.05.025

Organ, D.W. (1977). A reappraisal and reinterpretation of the satisfaction-causes-performance hypothesis. *Academy of Management Review, 2*, 46-53.

Organ, D.W. (1988). A restatement of the satisfaction-performance hypothesis. *Journal of Management, 14*, 547-557. doi: 10.1177/014920638801400405

Organ, D. W., & Lingl, A. (1995). Personality, satisfaction, and organizational citizenship behavior. *The Journal of Social Psychology, 135*, 339-350.

Paolacci, G., & Chandler, J. (2014). Inside the Turk: Understanding Mechanical Turk as a participant pool. *Current Directions in Psychological Science, 23*, 184-188. doi:10.1177/096372141531598

Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*, 539-569. doi:10.1146/annurev-psych-120710-100452

Porter, L. W., & Steers, R. M. (1973). Organizational, work, and personal factors in employee turnover and absenteeism. *Psychological Bulletin, 80*, 151-176. doi:10.1037/h0034829

Porter, L. W., Steers, R. M., Mowday, R. T., & Boulian, P. V. (1974). Organizational commitment, job satisfaction, and turnover among psychiatric technicians. *Journal of Applied Psychology, 59*, 603-609. doi:10.1037/h0037335

Preston, C. C., & Colman, A. M. (2000). Optimal number of response categories in rating scales: Reliability, validity, discriminating power, and respondent preferences. *Acta Psychologica, 104*, 1-15. doi:10.1016/S0001-6918(99)0050-5

Price, J. (1977). *The study of turnover.* Ames, IA: Iowa State Press.

Price, J., & Mueller, C. (1981). A causal model for turnover for nurses. *Academy of Management Journal, 24*, 543-565. doi:10.2307/255574

Prokopeak, M. (2018, March 21). *Follow the leader(ship) spending*. Retrieved from Chief Learning Officer: https://www.chieflearningofficer.com/2018/03/21/follow-the-leadership-spending/

Pulakos, E. D., & Schmitt, N. (1983). A longitudinal study of a valence model approach for the prediction of job satisfaction of new employees. *Journal of Applied Psychology, 68*, 307-312. doi:10.1037/0021-9010.68.2.307

Rafferty, A.E., & Griffin, M.A. (2004). Dimensions of transformational leadership: Conceptual and empirical extensions. *The Leadership Quarterly, 15*, 329-354. doi: 10.1016/j.leaqua.2004.02.009

Reise, S.P., Bonifay, W.E., & Haviland, M.G. (2013). Scoring and modeling psychological measures in the presence of multidimensionality. *Journal of Personality Assessment, 95,* 129-140. doi: 10.1080/00223891.2012.725437

Reise, S.P., Moore, T.M., & Haviland, M.G. (2010). Bifactor models and rotations: Exploring the extent to which multidimensional data yield univocal scale scores. *Journal of Personality Assessment, 92,* 544-559. doi: 10.1080/00223891.2010.496477

Riggio, R. (1990). *Introduction to industrial/organization psychology.* Glenview, IL: Scott, Foresman and Company.

Rodriguez, A., Reise, S.P., & Haviland, M.G. (2016). Evaluating bifactor models: Calculating and interpreting statistical indices. *Psychological Methods, 21,* 137-150. doi: 10.1037/met0000045

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press.

Rothman, K. J. (1990). No adjustments are needed for multiple comparisons. *Epidemiology, 1,* 43-46.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. *Psychological Monographs, 80,* 1-28. doi:10.1037/h0092976

Rouse, S. V. (2015). A reliability analysis of Mechanical Turk data. *Computers in Human Behavior, 43,* 304-307. doi:10.1016/j.chb.2014.11.004

Roznowski, M. (1989). Examination of the measurement properties of the Job Descriptive Index with experimental items. *Journal of Applied Psychology, 74,* 805-814. doi:10.1037/0021-9010.74.4.805

Ryan, R., & Deci, E. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55,* 68-78. doi:10.1037/0003-066X.55.1.68

Sackett, P., & Larson, J. J. (1990). Research strategies and tactics in industrial and organizational psychology. In M. Dunnette, & L. Hough, *Handbook of industrial and organizational psychology* (pp. 419-489). Palo Alto, CA: Consulting Psychologists Press.

Salancik, G. R., & Pfeffer, J. A. (1978). A social information processing approach to job attitudes and task design. *Administrative Science Quarterly, 23*, 224-235. doi:10.2307/2392563

Salovey, P., Stroud, L., Woolery, A., & Epel, E. (2002). Perceived emotional intelligence, stress reactivity, and symptom reports: Further explorations using the trait meta-mood scale. *Psychology and Health, 17*, 611-627. doi:10.1080/08870440290025812

Scarpello, V., & Campbell, J. P. (1983). Job satisfaction: Are all the parts there? *Personnel Psychology, 36*, 579-600.

Schaffer, R. (1953). Job satisfaction as related to need satisfaction at work. *Psychological Monographs: General and Applied, 67*(14), 1-29. doi:10.1037/h0093658

Schleicher, D. J., Hansen, S. D., & Fox, K. E. (2011). Job attitudes and work values. In S. Zedeck, *APA handbook of industrial and organizational psychology: Maintaining, expanding, and contracting the organization* (Vol 3, pp. 137-189). Washington, DC: APA.

Schmidt, F., & Hunter, J. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin, 124*, 262-274.

Schneider, J., & Locke, E. (1971). A critique of Herzberg's incident classification system and a suggested revision. *Organizational Behavior and Human Performance*, 441-457. doi:10.1016/0030-5073(71)90027-4

Schumm, W. R., Gade, P. A., & Bell, B. D. (2003). Dimensionality of military professional values items: An exploratory factor analysis of data from the spring 1996 sample survey of military personnel. *Psychological Reports, 92*, 831-841. doi:10.2466/pr0.2003.92.2.831

Schwab, D. P., & Cummings, L. L. (1970). Theories of performance and satisfaction: A review. *Industrial Relations, 9*, 408-430.

Schwarz, N., Strack, F., & Mai, H. P. (1991). Assimilation and contrast effect in part-whole question sequences: A conversational logic analysis. *The Public Opinion Quarterly, 55*, 3-23. doi:10.1086/269239

Sherer, M., & Maddux, J. E. (1982). The Self-Efficacy Scale: Construction and validation. *Psychological Reports, 51*, 663-671. doi:10.2466/pr0.1982.51.2.663

Smith, C. A., Organ, D. W., & Near, J. P. (1983). Organizational citizenship behavior: Its nature and antecedents. *Journal of Applied Psychology, 68*, 653-663. doi:10.1037/0021-9010.68.4.653

Smith, P. C., Kendall, L. M., & Hulin, C. L. (1969). *The measurement of satisfaction in work and retirement.* Chicago: Rand McNally.

Smith, P., Smith, O., & Rollo, J. (1974). Factor structure for blacks and whites of the Job Descriptive Index and its discrimination of job satisfaction. *Journal of Applied Psychology, 59*, 99-100. doi:10.1037/h0035828

Smith, S. M., Roster, C. A., Golden, L. L., & Albaum, G. S. (2016). A multi-group analysis of online survey respondent data quality: Comparing a regular USA consumer panel to MTurk samples. *Journal of Business Research, 69*, 3139-3148. doi:10.1016/j.jbusres.2015.12.002

Solansky, S. T. (2010). The evaluation of two key leadership development program components: Leadership skills assessment and leadership mentoring. *The Leadership Quarterly, 21*, 675-681. doi:10.1016/j.leadqua.2010.06.009

Spector, P. E. (1982). Behavior in organizations as a function of employee's locus of control. *Psychological Bulletin, 91*, 482-497. doi: 10.1037/0033-2909.91.3.482

Spector, P. E. (1985a). Measurement of human service staff satisfaction: Development of the Job Satisfaction Survey. *American Journal of Community Psychology, 13*, 693-713. doi:10.1007/BF00929796

Spector, P. E. (1985b). Higher-order need strength as a moderator of the job scope-employee outcome relationship: A meta-analysis. *Journal of Occupational Psychology, 58*, 119-127. doi:10.1111/j.2044-8325.1985.tb00187.x

Spector, P. E. (1992). *Summated Rating Scale Construction: An Introduction (No. 82).* Newbury Park, CA: Sage.

Spector, P. E. (1997). *Job satisfaction: Application, assessment, causes, and consequences* (Vol. 3). Thousand Oaks, CA: Sage Publications.

Spector, P. E. (2011). The relationship of personality to counterproductive work behavior: An integration of perspectives. *Human Resource Management Review, 21*, 342-352. doi:10.1016/j.hrmr.2010.10.002

Spector, P. E., Rosen, C. C., Richardson, H. A., Williams, L. J., & Johnson, R. E. (2019). A new perspective on method variance: A measure-centric approach. *Journal of Management*, 855-880. doi:10.1177/1049206316687295

Srivastava, A., Locke, E. A., Judge, T. A., & Adams, J. W. (2010). Core self-evaluations as causes of satisfaction: The mediating role of seeking task completion. *Journal of Vocational Behavior, 77*, 255-265. doi: 10.1016/j.jvb.2010.04.008

Staw, B. M., & Ross, J. (1985). Stability in the midst of change: A dispositional approach to job attitudes. *Journal of Applied Psychology, 70*, 469-480. doi:10.1037/0021-9010.70.3.469

Steel, R. P., & Rentsch, J. R. (1997). The dispositional model of job attitudes revisited: Findings of a 10-year study. *Journal of Applied Psychology, 82,* 873-879. doi:10.1037/0021-9010.82.6.873

Steers, R. M. (1981). *Introduction to organizational behavior.* Glenview, IL: Scott, Foresman.

Strack, F., Martin, L. L., & Schwarz, N. (1988). Priming and communication: Social determinants of information use in judgments of life satisfaction. *European Journal of Social Psychology, 18,* 429-442. doi:10.1002/ejsp.2420180505

Streiner, D. L., & Norman, G. R. (2011). Correction for multiple testing: Is there a resolution? *Chest, 140,* 16-18. doi:10.1378/chest.11-0523

Tan, P. P., & Hawkins, W. E. (2000). The factor structure of the Minnesota Satisfaction Questionnaire and participants of vocational rehabilitation. *Psychological Reports, 87,* 34-36. doi:10.2466/pr0.2000.87.1.34

Teclaw, R., Osatuke, K., Fishman, J., Moore, S. C., & Dyrenforth, S. (2014). Employee age and tenure within organizations: Relationship to workplace satisfaction and workpalce climate perceptions. *The Health Care Manager, 33,* 4-19. doi:10.1097/01.HCM.0000440616.31891.2d

Tellegen, A., Watson, D., & Clark, L.A. (1999). On the dimensional and hierarchical structure of affect. *Psychological Science, 10,* 297-303. doi: 10.1111/1467-9280.00157

Tett, R. P., & Meyer, J. P. (1993). Job satisfaction, organizational commitment, turnover intention, and turnover: Path analyses based on meta-analytic findings. *Personnel Psychology, 46,* 259-293. doi:10.1111/j.1744-6570.1993.tb00874.x

Tett, R. P., Wang, A., & Fox, K. E. (2006). Multidimensional Emotional Intelligence Assessment - Workplace [Technical Manual]. Port Huron, MI: Sigma Assessment Systems, Inc.

Thibaut, J., & Kelley, H. (1959). *The social psychology of groups.* New York: Wiley.

Van Rooy, D. L., & Viswesvaran, C. (2004). Emotional intelligence: A meta-analytic investigation of predictive validity and nomological net. *Journal of Vocational Behavior, 65,* 71-95. doi:10.1016/S0001-8791(03)00076-9

Vandenberg, R. J., & Grelle, D. M. (2009). Alternative model specifications in structural equation modeling: Facts, fictions, and truth. In C. E. Lance, & R. J. Vandenberg, *Statistical and methodological myths and urban legends: Doctrine, verity and fable in the organizational and social sciences* (pp. 165-191). New York, NY: Routledge/Taylor & Francis Group.

Vroom, V. H. (1964). *Work and motivation.* New York, NY: Wiley.

Wang, X., & Howell, J. (2012). A multilevel study of transformational leadership, identification, and follower outcomes. *The Leadership Quarterly, 23,* 775-790. doi: 10.1016/j.leaqua.2012.02.001

Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology, 82,* 247-252.

Wanous, J. P., Sullivan, S. E., & Malinak, J. (1989). The role of judgment calls in meta-analysis. *Journal of Applied Psychology, 74,* 259-264. doi:10.1037/--21-9010.74.2.259

Wanous, J., & Lawler, E. (1972). Measurement and meaning of job satisfaction. *Journal of Applied Psychology, 56,* 95-105. doi:10.1037/h0032664

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54,* 1963-1070.

Weijters, B., Cabooter, E., & Schillewaert, N. (2010). The effect of rating scale format on response styles: The number of response categories and response category labels.

International Journal of Research in Marketing, 27, 236-247. doi:10.1016/j.ijresmar.2010.02.004

Weiss, D. J., Dawis, R. V., England, G. W., & Lofquist, L. H. (1967). Mannual for the Minnesota Satisfaction Questionnaire [Technical Manual]. Minnesota: The Vocational Rehabilitation Administration.

Weiss, H., & Cropanzano, R. (1996). An affective events approach to job satisfaction. In B. Staw, & L. Cummings, *Research in organizational behaviour* (Vol. 18, pp. 1-74). Greenwich, CT: JAI Press.

Williams, L. J., & Anderson, S. E. (1991). Job satisfaction and organizational commitment as predictors of organizational citizenship and in-role behaviors. *Journal of Management, 17*, 601-617. doi:10.1177/014920639101700305

Williams, L. J., & McGonagle, A. K. (2016). Four research designs and a comprehensive analysis strategy for investigating common method variance with self-report measures using latent variables. *Journal of Business Psychology, 31*, 339-359. doi:10.1007/s10869-015-9422-9

Yeager, S. J. (1981). Dimensionality of the Job Descriptive Index. *The Academy of Management Journal, 24*, 205-212. doi:10.5465/255836

Zaleznick, A. (2011). Managers and leaders: Are they different? In M. F. Kets de Vries, & K. Korotov (Eds.), *Leadership Development* (pp. 154-161). Northampton, MA: Edward Elgar Publishing.

Zenger, J., & Folkman, J. (2014, November 24). *Why middle managers are so unhappy*. Retrieved from Harvard Business Review: https://hbr.org/2014/11/why-middle-managers-are-so-unhappy

Zimmerman, R. D. (2008). Understanding the impact of personality traits on individuals' turnover decisions: A meta-analytic path model. *Personnel Psychology, 61*, 309-348. doi:10.1111/j.1744-6570.2008.00115.x

Appendix A: Interview Coding Guide

A Priori Categories	A Priori Subdomains	Data Emergent Subdomains
Work	Task variety Keep busy Routine	Clarity of roles and responsibilities
Pay/ Compensation	Adequate income Pay vs. work input Underpaid Comparable to other employers Fringe benefits	
Promotion	Dead-end job Unfair promotion policy Opportunities for advancement Getting ahead	Not considered for advancement
Supervision	Competence of my boss Mutual understanding Supports employees Delegates to employees Demonstrates know-how	Predictability of relationship with superiors Avoiding micromanagement Being micromanaged
Co-workers	Develop friendships Cooperative team Get-along with one another Rude people Lots of bickering	Lack of leadership among colleagues
Ability Utilization	Make use of my abilities Do what I do best	
Achievement	Take pride in my work Feel accomplished My work is meaningless	
Authority	Tell others what to do Offer guidance Supervise others	Ability/authority to reward/sanction behaviour of followers Inability to sanction/let go of bad employees Responsibility with authority Ability to take action Lack of control over the direction of the team Undermining authority
Policy/ Practice	Policy implementation Organization's treatment of employees Communication of the organization	Indecisiveness Left out of hiring decisions Consistency in policies Holding senior leaders accountable Senior leaders disconnected from work

A Priori Categories	A Priori Subdomains	Data Emergent Subdomains
Independence	Chance to work alone Autonomy	Autonomy/independence Autonomy Lack of independence
Creativity	Try my own methods Develop new and better ways	Opportunities to be creative Allowed to develop innovative solutions Freedom to problem solve
Moral Values	Don't do things that go against my conscience Feel morally wrong	
Recognition/ Status	Get praise My social position Noticed for good work Get credit Feel appreciated	Recognition for work done Feeling overlooked Lack of respect
Responsibility	Freedom to use my own judgment Plan my own work Make my own decisions	
Security	Steady employment Job security	
Social Service	Do things for others Serve others	Work has an impact in areas that matter
Working Conditions	Physical conditions Comfortable environment	Allocating/having access to resources Resources are relevant

Data Emergent Categories	Data Emergent Subdomains
Transparency	Clarity of communication
	Deception/secrecy in communications
	Communicate your vision
	Secrecy/ not allowed to communicate to followers
	Lack of communication
	Information isn't shared
Mentorship	Subordinate accountability
	Treat subordinates with respect
	Work in the best interest of subordinates
	Skilled subordinates to execute decisions
	Inspire followers to reach their potential
	Inspire innovation in others
	Mentorship is important
	Seeing individuals gain confidence
	Coaching
	Rewarding to see people grow and develop
	Hiring externally but developing within
	Fostering a culture of giving people opportunities
	Challenging others; providing a safe environment to fail
Strategic Planning	Ability to effect change at the company level
	Sticking to strategic plans
	Not being distracted by fads
Team Development	Ability to facilitate teamwork
	Establishing trust
	Seeing the team progress
	Bringing people together
	People who are just out for themselves
	People value own monetary gain at the expense of the team
	Learning from team members

Note. A priori categories were derived from the facets measured by the JDI, MSQ, and JSS. In some instances, facets were merged if they have been demonstrated to be highly correlated with one another and were conceptually representative of the same construct (i.e., recognition and status, work and variety). Subdomain content represent prototypical statements reflected in the specific item content of each of these scales. Attempts were made to include both positively and negatively keyed examples for each category. As evidenced from this list of categories, this interview coding guide takes an integrative approach to identifying facets of satisfaction. They include categories reflecting both need fulfillment (i.e., Schaffer's (1953) achievement, recognition, socioeconomic status, and many other needs are represented) and job design (i.e., JCM's autonomy, variety, task identity, and other characteristics are represented).

Appendix B: Interview Questions

The purpose of this questionnaire is to give you a chance to describe how you feel about your present job, what things you are satisfied with and what things you are not satisfied with. On the basis of your answers and those of people like you, we hope to get a better understanding of the things people like and dislike about their jobs.

1. When someone asks you "Are you satisfied with your job?" what are the different things that come to mind?
2. You mentioned several factors that contribute to satisfaction within a leadership role. Which of these things would you consider most important to your own satisfaction?
3. Can you please describe some specific instances (or situations) where you felt particularly satisfied with your job?
4. I am going to read a list of facets that some people might consider to be important to their job satisfaction. For each facet, please rate how important it is to your own satisfaction in a leadership role, using the scale: 1 (not at all important) to 5 (extremely important)
    - Compensation
    - Advancement opportunities
    - Autonomy/independence
    - Job security
    - Coworkers
    - Supervision
    - Working conditions
    - Company policies and practices
    - Achievement
    - Recognition
    - Creativity
5. There are several experiences that can lead to frustration on the job and may contribute to dissatisfaction. As a leader, what are some factors that lead you to be dissatisfied with your job?
6. Can you please describe some specific instances (or situations) where you felt particularly dissatisfied with your job?
7. Is there anything else you'd like to comment on as it pertains to satisfaction in a leadership role; either to your own personal satisfaction or to leader satisfaction in general?

Appendix C: Initial Leadership Satisfaction Assessment Facet Definitions

Facet	Definition (Level of satisfaction with…)
AbUt	The opportunity to effectively make use of one's full range of KSAO's (knowledge, skills, abilities, and other attributes) at work.
Auto	The latitude one has to make decisions and manage his/her direct reports as he/she would like.
Comp	The compensation one receives in exchange for the work that he/she does.
CoWo	The people with whom one works.
Creat	One's opportunities to contribute to work in unique and imaginative ways.
Ment	The degree to which one provides personal and professional development opportunities to his/her direct and indirect reports.
Pach	The opportunities for personal and professional development that one's job provides, and the sense of pride and accomplishment one experiences as a result.
Poli	The policies and practices put in place by one's organization, including their impact on employees.
Prom	The opportunities for advancement within one's current position.
Reco	The acknowledgement and appreciation one receives both at work and socially, in exchange for the work he/she does.
Secu	One's perceived reliability of continued employment within his/her current organization.
Serv	The meaning one derives from his/her work and the degree to which one's job allows them to help and make a difference in the lives of others, and society in general.
Soli	The proportion of work you do independently of others.
StPl	The manner in which one's organization pursues its' vision, and the degree to which one can effect meaningful influence over its' strategic direction.
Supe	The clarity with which your leader explains what is expected of you.
Tdev	The degree to which one's direct and indirect reports work effectively together in a collaborative team environment.
Tran	The frequency and manner with which information passes through the organization (i.e., in an open and honest manner).
ValC	The values expressed by one's organization and how these values align with one's own values.
Work	The nature of one's work, as it pertains to specific tasks that are completed as a part of one's job.
Wcon	The physical surroundings of one's work space, including the adequacy of resources/equipment necessary to perform one's job.

AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Creat = Creativity, Ment = Mentorship, Pach = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, Tdev = Team Development, Tran = Transparency, ValC = Value Congruence, Wcon = Working Conditions

Appendix D: Revised Leader Satisfaction Assessment Facet Definitions

Facet	Definition (Level of satisfaction with…)
AbUt	The opportunity to make use of the full range of one's knowledge, skills, and abilities at work.
Auto	The freedom one has to make decisions and manage their direct reports as they would like.
Comp	The compensation one receives in exchange for the work they do.
CoWo	The people they work with.
Creat	The opportunities one has to be innovative and imaginative at work.
Ment	The degree to which one provides professional development opportunities to their direct reports.
Pach	The opportunities for personal and professional development that one's job provides.
Poli	The policies and practice put in place by one's organization, and how they impact employees.
Prom	The opportunities for advancement within one's current position.
Reco	The acknowledgement and appreciation one receives in exchange for the work they do.
Secu	The stability of one's employment within their current organization.
Serv	The meaning one derives from their work and the degree to which one's job allows them to help and make a difference in the lives of others.
Soli	The degree of independence in one's job.
StPl	The degree to which one has a meaningful influence on the strategic direction of their organization.
Supe	The quality of support one receives from their leader.
Tdev	The degree to which one's direct reports work together in a collaborative team environment.
Tran	The manner in which information passes through the organization.
ValC	The alignment between one's own values and the values of their organization.
Work	The nature of one's work, as it pertains to specific tasks that are completed as a part of one's job.
Wcon	The physical surroundings of one's work space, including the adequacy of resources/equipment necessary to perform one's job.

AbUt = Ability Utilization, Auto = Autonomy, Comp = Compensation, CoWo = Coworkers, Creat = Creativity, Ment = Mentorship, Pach = Personal Achievement, Poli = Policy, Prom = Promotion, Reco = Recognition, Secu = Security, Serv = Service, Soli = Solitude, StPl = Strategic Planning, Supe = Supervision, Tdev = Team Development, Tran = Transparency, ValC = Value Congruence, Wcon = Working Conditions

Appendix E: Identifying Questionable Data in Sample 2

Participants for Sample 2 were recruited from MTurk. A total of *N* = 572 responses were collected from leaders. The data were cleaned to remove cases where participants failed to meet the eligibility requirements (n = 27), or where they completed the materials more than once (n = 75), with their first set of responses being retained. Leaders were also removed from further analyses if they failed to answer any questions beyond the demographics (n = 51), or if they had previously been included in Sample 1 (n = 23). Last, participants who failed to respond as instructed to more than one of the four directed response items were removed (n=22). This resulted in a final sample size of *N* = 374.

Preliminary analyses on Sample 2 data suggested a potential problem with the data. In particular, there seemed to be a high degree of unreliability in the data, made evident by exceptionally low Cronbach's alpha values, especially for those scales that contained reverse-coded items (see Table E1). Interitem correlations were examined for each scale. On average, positively-keyed items were found to correlate as expected with one another (e.g., affective commitment M_r = .58) and negatively-keyed items were correlated with one another (e.g., affective commitment M_r = .74). However, the average correlation between positively- and negatively-keyed items was negligible, or even negative (e.g., affective commitment M_r = -.07).

Based on these default screening procedures, approximately 34.6% of the sample was removed, with most being the result of duplicate cases or substantial missing data. This was much greater than the typical rate of careless responding of 10-12% reported by Meade and Craig (2012). In addition, the removal of a substantial portion of the data did not resolve issues of unreliability, with the data suggesting that inconsistency in responding to negatively-keyed items may have been the source of the unreliability.

Table E1

Cronbach's Alpha for Select Scales in Survey Sample 2 (N = 374)

	Cronbach's Alpha
Commitment	
Affective	.65*
Normative	.66*
Continuance	.85
Turnover Intentions	
Organization	.85
Job	.85
Occupation	.86
CWB	
Individual	.94
Organizational	.96
OCB	
Individual	.77
Organizational	.62*
Core Self-Evaluations	
Self-Esteem	.75*
Self-Efficacy	.88*
Neuroticism	.29*
Personality	
Honesty-Humility	.50*
Extraversion	.49*
Agreeableness	.32*
Conscientiousness	.68*
Openness	.60*
Emotional Intelligence	
WLEIS Reg of Emotions	.76
MEIA-W Reg of Emotions Self	.48*
WLEIS Others Emotions Appraisal	.76
MEIA-W Rec of Emotions Others	.37*
Impression Management	
Agentic	.03*
Communal	.31*

Note. * denotes a scale that contains reverse-coded items. CWB = Counterproductive workplace behaviours; OCB = Organizational citizenship behaviours; WLEIS = Wong and Law Emotional Intelligence Scale; MEIA-W = Multidimensional Emotional Intelligence Assessment – Workplace.

Unreliability in MTurk Data

Recently, there have been renewed concerns over the quality of data obtained from MTurk samples. In 2018, Bai first reported that a large portion of their data appeared to contain random responses. These random responses were linked to repeating GPS locations, with "repeaters" accounting for 48.5% of the sample. Bai reported substantially lower scale reliabilities for entries with repeating GPS locations ($\alpha = .11$) than for non-repeating entries ($\alpha = .87$). This sparked a discussion within the social science community of the possibility that automated bots were responsible for widespread random responding in MTurk samples (Dreyfuss, 2018).

Although it remains unknown whether the source of unreliability in the present sample was due to bots or simply human participants who carelessly click through materials, several online forums now exist to help researchers identify these non-purposeful responses. Suspicious geolocations of respondents seem to be the most prevalent means of identifying these individuals, with specific locations being linked to "server farms" that are able to circumvent IP address screens that researchers apply (i.e., to only collect data from IP addresses located in the US). Responses from these server farms seem to produce consistently low-quality data (Dennis et al., in press). However, due to the anonymization of data collection required by Western University's Ethics Review Board in the present study, geolocation data was not available and therefore could not be used to screen participants.

Procedure for Data Cleaning

Researchers have noted several patterns in responses that tend to be associated with low quality data (Dennis et al., in press). Although no single index will correctly identify all cases with complete certainty, a number of criteria were examined in the present study using a

stepwise approach to identify non-purposeful responders, working with the original data export of $N = 572$. These included setting more stringent criteria for duplicate cases and failed directed response items, confirming participant eligibility with self-reported work experience, and examining the validity of responses to open-ended text questions.

At each step, those who failed to meet the necessary criteria were flagged but not removed. This procedure was adopted for two reasons: first, so that the number of checks any one individual failed could be identified and second, so that comparisons could be made between purposeful and non-purposeful responders on metrics of interest.

Verification of Item Coding

Before performing additional analyses to identify the source of unreliability in the present sample, it was important to ensure that the data had been reverse coded correctly, and that recoded items had correctly been used in the calculation of these reliabilities, rather than raw items. Scale reliabilities were recalculated, this time using raw items rather than reverse-coded. The average correlation between positive- and negatively-keyed items continued to be minimal. Next, all recoding syntax was reviewed and no errors were found. Raw items were correlated with their reverse-coded counterparts and these values were found to correlate at $r = -1.00$ in all cases. In addition, select test cases were chosen at random and response values in the data export were compared to the individual's radio-button responses to the survey materials to ensure that data had been exported properly. Based on these results it was concluded that the low Cronbach's alpha reliabilities observed in the data were not a result of errors in reverse coding.

Screening for Duplicate Responses

The first step in identifying non-purposeful responses was to identify duplicate responses cases. These cases were identified by repeating Worker IDs. When the default screening

procedures were conducted previously, the first set of responses for duplicate cases had been retained. However, with this more stringent round of data-cleaning all cases associated with a duplicate Worker ID were flagged. This decision was made on the basis that participants tended to change their responses across trials, even to basic demographic questions such as age and ethnicity. Since there was no way to verify that any one set of responses were accurate, all instances were flagged. This resulted in 175 cases (30.6% of the sample) being flagged.

Stricter Directed Response Cutoff

In an attempt to identify careless responders within the dataset, a stricter criterion was adopted for directed response items (e.g., "For quality control purposes, please answer Strongly Disagree to this item."). If an individual failed to answer as instructed to any of the four careless response items they were flagged for careless responding. There were 62 individuals who failed one or more of these items (10.8% of the sample).

Verifying Eligibility

Next, recorded cases for those who did not meet eligibility requirements were flagged. If an individual answered yes to both eligibility screening questionnaires but when later asked about their work experience indicated that they currently had zero direct reports they were flagged as being ineligible to participate. There were a total of 40 individuals who were identified as ineligible (7.0% of the sample).

Valid Responses to Open-Ended Questions

Researchers have noted that cases of non-purposeful responding tend to be associated with unusual answers to open-ended text questions (Bai, 2018; Litman et al., 2018). This could include copied and pasted content from web pages (often the same web page across participants), incoherent and grammatically poor responses, or single-word, contextually-irrelevant answers

(e.g., “good”, “nice”). Participants were asked to respond to open-ended text questions about the number of direct reports they had, the number of hours they worked per week, on average, and the number of years they had been employed in their current position. Individuals were flagged if they entered text into these fields rather than numbers (e.g., “COMPUTE”, “Admin”). They were also flagged if they reported having more than 100 direct reports, or if they reported working more than 140 hours a week (which would correspond to seven, 20-hour work days in one week). Individuals were also flagged if their reported position tenure was suspicious based on their reported age. For example, if their reported position tenure corresponded to them being younger than 14 years of age at the beginning of their employment, their responses were flagged. A total of 126 individuals were flagged based on their responses to these open-ended questions (22.0% of the sample).

Index of Unreliability

An overall “unreliable” score was calculated for each individual, where their score corresponding to the number of purposeful response checks they failed. Scores could range from zero (did not fail any checks) to four (failed duplicate ID, directed response, study eligibility, and validated open-ended response checks). Based on this criteria, a total of 310 participants were identified as unreliable (54.2% of the sample) and an additional 22 cases were removed because the individuals were previously included in Sample 1. Among the unreliable participants, the average unreliability score was $M = 1.31$ ($SD = 0.51$). This suggested that although some individuals failed multiple validity checks, the majority who were identified as unreliable only failed one or two checks.

To ensure that the individuals identified as unreliable were accurately classified, Cronbach’s alpha values were computed in each group of respondents (unreliable versus

purposeful responders). Table E2 reports the internal consistency estimates for a subset of the survey materials across these two groups. As evident by Table E2, internal consistency estimates among the unreliable responders were substantially lower than those reported among purposeful responders, across all scales. Notably, these correlations were much worse for scales that contained negatively-keyed items (e.g., HEXACO) compared to those that did not (e.g., WLEIS).

Researchers have also noted that MTurk respondents that are associated with farm servers tend to be significantly worse at correctly answering English proficiency items than are individuals without these suspicious geolocations. Litman et al. (2018) reported that only 36.17% of respondents from a server farm correctly passed an English proficiency screening questionnaire, whereas 96% of non-farmers passed this same screen. Although such a screening survey was not administered in the present study, vocabulary items on the ICAR could be used as a proxy of English proficiency. In particular, the pass-rate for the least-difficult ICAR vocabulary item was compared between unreliable and purposeful responders. The item "The opposite of a 'stubborn' person is a '_____' person", is a multiple-choice question in which independently collected research data suggested that 70% of respondents accurately identify "flexible" as the correct answer. Among participants identified as unreliable in the present sample, only 38% answered the question correctly. In contrast, 62% of purposeful participants correctly answered the question. Although not a perfect indicator of unreliability, when these findings were taken together with the results reported in Table E2, there seemed to be evidence to suggest that, on average, those identified as unreliable in the present sample were accurately classified.

Table E2

Cronbach's Alpha for Unreliable and Purposeful Responders in Survey Sample 2

	Unreliable (N = 310)	Purposeful (N = 240)
Commitment		
Affective	.41*	.71*
Normative	.53*	.70*
Continuance	.82	.87
Turnover Intentions		
Organization	.74	.88
Job	.78	.87
Occupation	.78	.87
CWB		
Individual	.91	.95
Organizational	.95	.96
OCB		
Individual	.75	.77
Organizational	.22*	.69*
Core Self-Evaluations		
Self-Esteem	.32*	.81*
Self-Efficacy	.65*	.91*
Neuroticism	-.43*	.50*
Personality		
Honesty-Humility	.04*	.61*
Extraversion	.08*	.60*
Agreeableness	-.05*	.44*
Conscientiousness	.25*	.76*
Openness	.41*	.65*
Emotional Intelligence		
WLEIS Reg of Emotions	.73	.74
MEIA-W Reg of Emotions Self	-.15*	.64*
WLEIS Others Emotions Appraisal	.72	.79
MEIA-W Rec of Emotions Others	-.20*	.51*
Impression Management		
Agentic	-.77*	.34*
Communal	-.37*	.48*

Note. * denotes a scale that contains reverse-coded items. CWB = Counterproductive workplace behaviours; OCB = Organizational citizenship behaviours; WLEIS = Wong and Law Emotional Intelligence Scale; MEIA-W = Multidimensional Emotional Intelligence Assessment – Workplace.

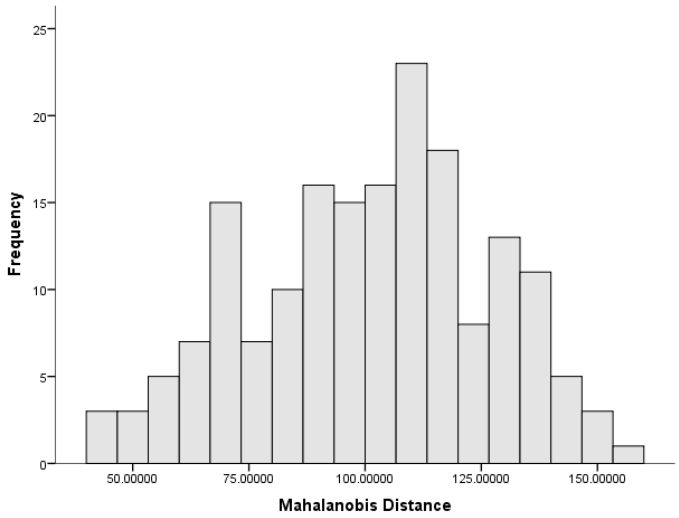
Although the reliability of the data was greater among those identified as purposeful responders, the internal consistency estimates for some scales reported in Table E2, in particular the HEXACO, suggested that there may have been additional issues with the data. As such, within the purposeful responders' data, additional steps were taken to identify non-purposeful cases. In particular, Mahalanobis distance was computed to identify multivariate outliers, and a within-person response consistency index was computed following the recommendations of Jackson (1977).

Identifying Multivariate Outliers

Mahalanobis distance was computed to identify outliers in the data using a multivariate approach. As noted by Meade and Craig (2012), Mahalanobis distance can be useful for identifying inattentive response patterns. As such, if a bimodal distribution were found to underlie the Mahalanobis distance statistic then this would help to identify an appropriate cutoff value for excluding outliers. Mahalanobis distance was computed using all the negatively keyed items administered in the study since this appeared to be the source of the unreliability in the data. As demonstrated in Figure E1, a bimodal distribution was not observed. Instead, the data appeared to be normally distributed. As such, the Mahalanobis distance value for each individual was tested for significance against the chi-squared distribution. Only one individual was identified as a statistically significant outlier at $p < .001$.

Figure E1

Frequency Curve for Mahalanobis Distance among Purposeful Responders in Survey Sample 2



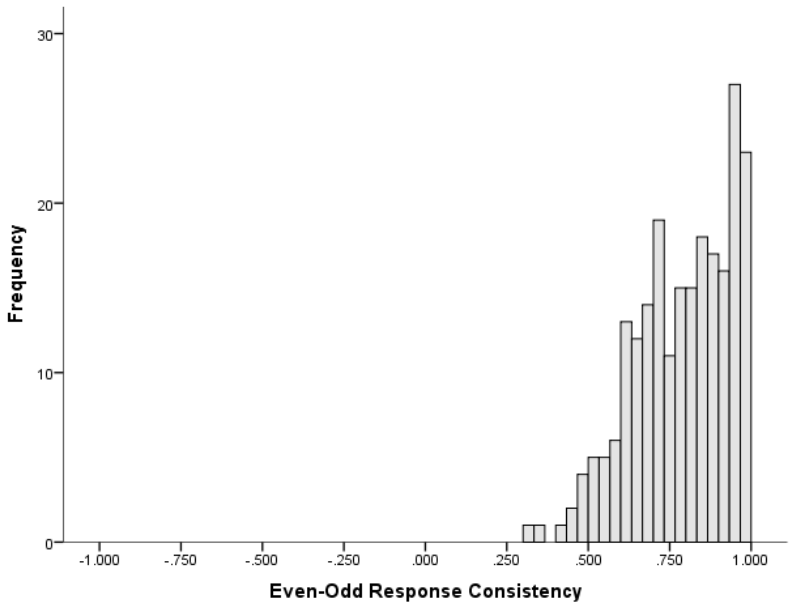
Within-Person Response Consistency

A within-person response consistency index can be used to identify the degree to which individual respondents responded consistently to items belonging to a given scale, on average, across all scales in the sample. Following the recommendations of Jackson (1977), each unidimensional scale was split into two subscales, with the first subscale defined by all the odd-numbered items on the scale and the second subscale defined by all the even-numbered items on the scale. Odd and even items were determined based on the order of administration of the scales. Then, an “odd” and an “even” score was computed for each scale, within individuals. Next, a within-person correlation was obtained by correlating even subscale scores with their corresponding odd subscale scores. This value was then corrected using the Spearman-Brown split half prophecy formula (Meade & Craig, 2012).

As can be seen in Figure E2, the distribution of even-odd consistency correlations was found to be negatively skewed, which closely matches the pattern observed by other researchers for Internet samples (Johnson, 2005). The mean even-odd response consistency correlation in Sample 2 was M_r = .79 (Min = .32; Max = .99), which was somewhat lower than that reported by other researchers (see Johnson, M_r = .84). Jackson (1977) recommended excluding cases with a value of .30 or lower on the basis of inconsistent responding. However, in the present sample there were no individuals who fell below this threshold. Although setting stricter exclusion criteria (i.e., cut point at .6) did somewhat improve reliabilities, the issue of poor positively and negatively keyed item correlations was not eliminated. As such, this index was not particularly useful for identifying the sources of unreliability in the data.

Figure E2

Frequency Curve for the Even-Odd Response Consistency Index in Survey Sample 2



Since the source of the unreliability in the data seemed to continue to come from inconsistent responding across positively and negatively keyed items, a modified version of Jackson's (1977) response consistency index was computed. Rather than splitting each scale into even and odd numbered subscales, this split was performed on positive versus negatively keyed items. This consistency index was computed based on responses to the BIMI, HEXACO, RSES, SES, MEIA-W, affective commitment, and organizational OCB subscales. The average response consistency was found to be lower than would be expected (M_r = .54), with values ranging from r = -.58 to r = +.98. As demonstrated in Figure E3, this response consistency index demonstrated a somewhat bimodal distribution. These results suggested that applying a cutoff value of around .40 may be appropriate for removing additional non-purposeful responders. Applying this cut-point resulted in a reduced sample size of N = 163.

Figure E3

Frequency Curve for the Positive-Negative Response Consistency Index in Survey Sample 2

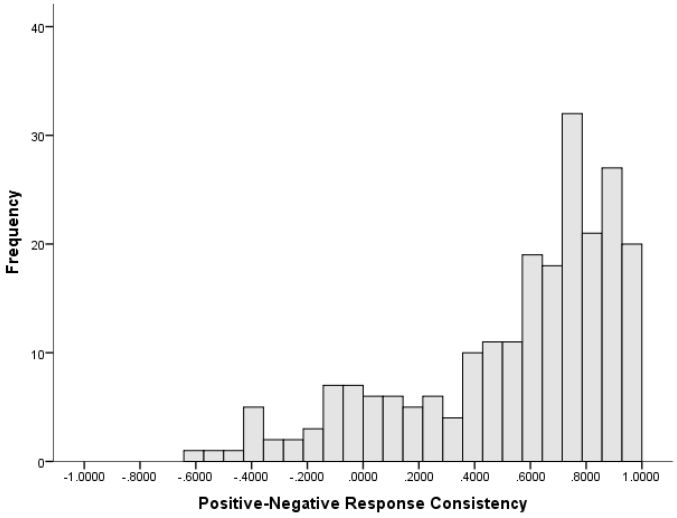


Table E3 compares the Cronbach's alpha values among all individuals previously identified as purposeful responders with those identified as having a positive-negative response consistency value greater than .40. These data demonstrated that internal consistency estimates were improved in the group where response consistency was greater than .40. Examination of the interitem correlations within this group demonstrated that positively and negatively keyed items were significantly correlated with one another (e.g., affective commitment M_r = .26). The exception to this was for scales on the HEXACO, MEIA-W, and BIMI, where the response pattern continued to be an issue. As such, the decision was made to remove these scales from all planned analyses, as confidence in the integrity of the data could not be obtained.

Table E3

Cronbach's Alpha for Purposeful Responders in Survey Sample 2

	Purposeful (N = 240)	RCI > .4 (N = 163)
Commitment		
Affective	.71*	.79*
Normative	.70*	.76*
Continuance	.87*	.84*
Turnover Intentions		
Organization	.88	.88
Job	.87	.88
Occupation	.87	.89
CWB		
Individual	.95	.95
Organizational	.96	.96
OCB		
Individual	.77	.80
Organizational	.69*	.76
Core Self-Evaluations		
Self-Esteem	.81*	.86*
Self-Efficacy	.91*	.93*
Neuroticism	.50*	.58*
Personality		
Honesty-Humility	.61*	.66*
Extraversion	.60*	.68*
Agreeableness	.44*	.56*
Conscientiousness	.76*	.79*
Openness	.65*	.72*
Emotional Intelligence		
WLEIS Reg of Emotions	.74	.70
MEIA-W Reg of Emotions Self	.64*	.67*
WLEIS Others Emotions Appraisal	.79	.79
MEIA-W Rec of Emotions Others	.51*	.60*
Impression Management		
Agentic	.34*	.53*
Communal	.48*	.63*

Note. * denotes a scale that contains reverse-coded items. RCI = Response consistency index; CWB = Counterproductive workplace behaviours; OCB = Organizational citizenship behaviours; WLEIS = Wong and Law Emotional Intelligence Scale; MEIA-W = Multidimensional Emotional Intelligence Assessment – Workplace.

Conclusion

The data screening procedures implemented in the present sample were based on researchers' best practice recommendations in both the published literature, and as documented on up-to-date research forums. A triangulation of methods was required based on the data available. These methods included screening out cases based on duplicate IDs, incorrect responses to directed response items, work experience that made individuals ineligible for the research study, and invalid responses to open-ended text questions. Support for the accurate identification of individuals as unreliable responders was demonstrated by considerably lower Cronbach's alpha values among this group relative to purposeful responders, and the increased rate at which unreliable responders failed to correctly answer a simple English proficiency item. Last, further screening of the data was carried out through the identification of multivariate outliers via Mahalanobis distance, and the verification of within-person response consistency.

In total, a substantial portion of the data (69.1%) were removed from analyses due to concerns of unreliable responding. While this is a dramatic drop in sample size, the removal of these cases meant that the reliability of scales containing negatively keyed items increased by .18, on average. Unfortunately, improvements in the reliabilities of scales belonging to the HEXACO, MEIA-W, and BIMI did not improve enough to justify their inclusion in further analyses.

Appendix E References

Bai, H. (2018, August 8). Evidence that a large amount of low quality responses on MTurk can be detected with repeated GPS coordinates. Retrieved from https://www.maxhuibai.com/blog/evidence-that-responses-from-repeating-gps-are-random

Dennis, S.A., Goodson, B.M., & Pearson, C. (in press). Online worker fraud and evolving threats to the integrity of MTurk data: A discussion of virtual private servers and the limitations of IP-based screening procedures. *Behavioral Research in Accounting*. Retrieved from https://ssrn.com/abstract=3233954.

Dreyfuss, E. (2018, August 17). A bot panic hits Amazon's Mechanical Turk. Retrieved from https://www.wired.com/story/amazon-mechanical-turk-bot-panic/

Jackson, D.N. (1977). *Jackson Vocational Interest Survey manual.* Port Huron, MI: Sigma Assessment Systems, Inc.

Johnson, J.A. (2005). Ascertaining the validity of individual protocols from Web-based personality inventories. *Journal of Research in Personality, 39*, 103-129. doi: 10.1016/j.jrp.2004.09.009

Litman, L., Robinson, Y., Moss, A.J., & Gautam, R. (2018, September 18). After the bot scare: Understanding what's been happening with data collection on MTurk and how to stop it. Retrieved from https://www.cloudresearch.com /resources/blog/after-the-bot-scare-understanding-whats-been-happening-with-data-collection-on-mturk-and-how-to-stop-it/

Meade, A.W., & Craig, B.S. (2012). Identifying careless responses in survey data. *Psychological Methods, 17*, 437-455. doi: 10.1037/a0028085

Appendix F: Glossary of Abbreviations

Abbreviation	Description
ACS	Affective Commitment Scale
BIMI	Bidimensional Impression Management Inventory
CCS	Continuance Commitment Scale
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
CMV	Common Method Variance
CWB	Counterproductive Workplace Behaviours
CWB-I	Counterproductive Workplace Behaviours towards Individuals
CWB-O	Counterproductive Workplace Behaviours towards the Organization
EFA	Exploratory Factor Analysis
EI	Emotional Intelligence
ESEM	Exploratory structural equation modeling
EWC	ESEM-within-CFA
FFM	Five Factor Model
GMA	General Mental Ability
I/O	Industrial and Organizational
ICAR	International Cognitive Ability Resource
JCM	Job Characteristics Model
JDI	Job Descriptive Index
JDS	Job Diagnostic Survey
JIG	Job in General Scale
JSS	Job Satisfaction Survey
LMX	Leader-Member Exchange
LSA	Leader Satisfaction Assessment
MEIA-W	Multidimensional Emotional Intelligence Assessment - Workplace
MOAQ	Michigan Organizational Assessment Questionnaire
MSQ	Minnesota Satisfaction Questionnaire
MTurk	Amazon's Mechanical Turk
NCS	Normative Commitment Scale
OCB	Organizational Citizenship Behaviours
OCB-I	Organizational Citizenship Behaviours towards Individuals
OCB-O	Organizational Citizenship Behaviours towards the Organization
PRF	Personality Research Form
RMSEA	Root Mean Square Error of Approximation
RSES	Rosenberg Self-Esteem Scale
SES	Self-Efficacy Scale
SME	Subject Matter Expert
TLI	Tucker-Lewis Index
WLEIS	Wong and Law Emotional Intelligence Scale
WLS	Weighted Least Squares
WRMR	Weighted Root Mean Square Residual

Curriculum Vitae

Name: Erica Sutherland

Post-Secondary Education and Degrees:

University of Western Ontario
London, Ontario, Canada
2008-2012 B.A.

University of Western Ontario
London, Ontario, Canada
2012-2014 M.Sc.

University of Western Ontario
London, Ontario, Canada
2014-2020 Ph.D.

Honours and Awards:

University of Western Ontario
Graduate Research Award
2018

University of Western Ontario
Doctoral Excellence Research Award
2016

University of Western Ontario
Sam Paunonen Award
2016

Canadian Society for Industrial and Organizational Psychology
CSIOP Student Poster Award
2015

Council of Canadian Departments of Psychology
Teaching Assistantship Award
2015-2016

Social Science and Humanities Research Council (SSHRC)
Joseph-Armand Bombardier CGS Doctoral Scholarship
2014-2017

The Western Psychology Association
Teaching Assistant of the Year
2012-2013, 2014-2015

Western University Graduate Student Teaching Assistants
Graduate Student Teaching Award
2013-2014

Province of Ontario Graduate Scholarship
2012-2013 (declined), 2013-2014, 2014-2015 (declined)

Social Science and Humanities Research Council (SSHRC)
Joseph-Armand Bombardier CGS Master's Scholarship
2012-2013

Related Work Experience

Senior Consultant
Sigma Assessment Systems, Inc.
2013-present

Lecturer
University of Western Ontario, Huron College
2017-2018

Honors Psychology Thesis Supervisor
University of Western Ontario
2015-2016

Teaching Assistant
University of Western Ontario
2012-2015

Research Assistant
University of Western Ontario
2011-2014

Publications:

Daljeet, K.N., Bremner, N.L., **Giammarco, E.A.,** Meyer, J.P., & Paunonen, S.V. (2017). Taking a person-centered approach to personality: A latent profile analysis of the HEXACO model of personality. *Journal of Research in Personality, 70,* 241-251.

Giammarco, E.A. (2016). Instincts (biological). In *Encyclopedia of Personality and Individual Differences.* doi: 10.1007/978-3-319-28099-8_769-1

Giammarco, E.A. (2016). The measurement of individual differences in morality. *Personality and Individual Differences, 88,* 26-34.

Azizli, N., Atkinson, B.E., Baughman, H.M., & **Giammarco, E.A.** (2015). Relationships between general self-efficacy, planning for the future, and life satisfaction. *Personality and Individual Differences, 82,* 58-60.

Giammarco, E.A., & Vernon, P.A. (2015). Interpersonal guilt and the Dark Triad. *Personality and Individual Differences, 81*, 96-101.

Giammarco, E.A., Schneider, T.J., Carswell, J.J., & Knipe, W.S. (2015). Video game preferences and their relation to career interests, *Personality and Individual Differences, 73*, 98-104.

Giammarco, E.A., & Vernon, P.A. (2014). Vengeance and the Dark Triad: The role of empathy and perspective taking in trait forgivingness, *Personality and Individual Differences, 67*, 23-29.

Veselka, L., **Giammarco, E.A.**, & Vernon, P.A. (2014). The Dark Triad and the seven deadly sins, *Personality and Individual Differences. 67*, 75-80.

Giammarco, E.A., Atkinson, B., Veselka, L., Baughman, H.M., & Vernon, P.A. (2013). The relation between antisocial personality and the perceived ability to deceive. *Personality and Individual Differences, 54*, 246-250.

Giammarco, E.A. (2013). Edgar Allan Poe: A psychological profile. *Personality and Individual Differences, 54*, 3-6.

Baughman, H.M., **Giammarco, E.A.,** Veselka, L., Schermer, J.A., Martin, N.G., Lynskey, M., & Vernon, P.A. (2012). A behavioral genetic study of humor styles in an Australian sample. *Twin Research and Human Genetics,15*, 663-667.

Baughman, H.M., Martens, S., **Giammarco, E.A.,** & Vernon, P.A. (2012). Relationships between bullying behaviours and the dark triad: A study with adults. *Personality and Individual Differences, 52,* 571-575.

Giammarco, E.A. (2011). Someone else's twin: The true story of babies switched at birth. A Review. *Personality and Individual Differences.* doi: 10.1016/j.paid.2011.10.042

Conference Presentations:

Carswell, J.J., Seijts, G., Crossan, M., **Giammarco, E.A.,** Carleton, E.L., & Nguyen, B. (2017). The validation of the Leadership Character Insight Assessment. Poster presented at the annual meeting of the Society for Industrial and Organizational Psychology, Orlando, Florida, April.

Giammarco, E.A., Mathieu, C., & Vernon, P.A. (2016). Machiavellianism and employee attitudes. Symposium presented at the annual meeting of the Canadian Psychological, Association, Victoria, Canada, June.

Atkinson, B., Wells, C., **Giammarco, E.A.,** & Vernon, P.A. (2016). Perceptions of supervisor personality and their relation to employee well-being. Symposium presented at the annual meeting of the Canadian Psychological, Association, Victoria, Canada, June.

Vernon, P.A., Mathieu, C., & **Giammarco, E.A.** (2016). Machiavellianism in the workplace. Symposium presented at the annual meeting of the Canadian Psychological, Association, Victoria, Canada, June.

Giammarco, E.A. (2015). The development and validation of a multidimensional measure of moral orientation. Symposium presentation given at the meeting of the International Society for the Study of Individual Differences, London, ON, July.

Giammarco, E.A., Lewis, R.J., & Carswell, J.J. (2015). The psychometric properties of the revised Personality Research Form. Poster presented at the meeting of the International Society for the Study of Individual Differences, London, ON, July.

Giammarco, E.A., Schneider, T.J., & Carswell, J.J. (2015). The profile of the addicted gamer. Poster presented at the meeting of the International Society for the Study of Individual Differences, London, ON, July.

Giammarco, E.A., Schneider, T.J., Carswell, J.J., & Knipe, W.S. (2014). Video game preferences and their relation to career interests. Poster presented at the annual meeting of the Canadian Psychological Association, Vancouver, Canada, June.

Giammarco, E.A., & Vernon, P.A. (2014). Interpersonal Guilt and the Dark Triad. Poster presented at the annual meeting of the Canadian Psychological Association, Vancouver, Canada, June.

Giammarco, E.A., & Vernon, P.A. (2014). Vengeance and the Dark Triad: The role of empathy and perspective taking in trait forgiveness. Poster presented at the annual meeting of the Canadian Psychological Association, Vancouver, Canada, June.

Giammarco, E.A., Baughman, H.M., Veselka, L., Schermer, J.A., Martin, N.G., Lynskey, M., & Vernon, P.A. (2013). A behavioural genetic study of humor styles in an Australian sample. Poster presented at the meeting of the International Society for the Study of Individual Differences, Barcelona, Spain, July.

Veselka, L., **Giammarco, E.A.,** & Vernon, P.A. (2013). The Dark Triad Traits and the Seven Deadly Sins. Symposium presentation given at the meeting of the International Society for the Study of Individual Differences, Barcelona, Spain, July.

Veselka, L., **Giammarco, E.A.,** & Vernon, P.A. (2013). The Seven Deadly Sins: Clarifying the Nature of a General Factor of Personality. Poster presented at the meeting of the International Society for the Study of Individual Differences, Barcelona, Spain, July.

Giammarco, E.A., Baughman, H.M., Veselka, L., Schermer, J.A., Martin, N.G., Lynskey, M., & Vernon, P.A. (2013). A behavioral genetic study of humor styles in an Australian sample. Poster presented at the annual meeting of the Canadian Psychological Association, Quebec City, Canada, June.

Spadafora, K., Veselka, L., **Giammarco, E.,** & Vernon, P.A. (2013). The relationship between the seven deadly sins and trait emotional intelligence. Poster presented at the annual meeting of the Canadian Psychological Association, Quebec City, Canada, June.

Raheb, H., Campbell, C., Baughman, H**., Giammarco, E.,** & Vernon, P.A. (2013). Suicide ideation and the dark triad of personality. Poster presented at the annual meetings of the Canadian Psychological Association, Quebec City, Canada, June.

Azizli, N., Baughman, H.M., **Giammarco, E.,** & Vernon, P.A. (2013). Relationships between general self-efficacy, planning for the future, and life satisfaction. Poster presented at the annual meetings of the Canadian Psychological Association, Quebec City, Canada, June.

Veselka, L., **Giammarco, E.A.,** Vernon, P.A. (2012). The Dark Triad and the seven deadly sins. Poster presented at the convention of the Canadian Psychological Association, Halifax, Nova Scotia, Canada, June.

Giammarco, E.A., Veselka, L., Baughman, H.M., & Vernon, P.A. (2012). The relation between antisocial personality and the perceived ability to deceive. Poster presented at the convention of the Canadian Psychological Association, Halifax, Nova Scotia, Canada, June.

Baughman, H.M., Martens, S., **Giammarco, E.A.,** & Vernon, P.A. (2012). Relationships between bullying behaviours and the dark triad: A study with adults. Poster presented at the convention of the Canadian Psychological Association, Halifax, Nova Scotia, Canada, June.

Giammarco, E.A., Veselka, L., Baughman, H.M., & Vernon, P.A. (2012). The relation between antisocial personality and the perceived ability to deceive. Poster presented at Connecting Minds, Richmond, British Columbia, Canada, May.

Baughman, H.M., Martens, S., **Giammarco, E.A.,** & Vernon, P.A. (2012). Relationships between bullying behaviours and the dark triad: A study with adults. Poster presented at Connecting Minds, Richmond, British Columbia, Canada, May.

Veselka, L., Baughman, H.M., **Giammarco, E.,** Schermer, J.A., Martin, N.G., Lynskey, M., & Vernon, P.A. (2012). A behavioural genetic study of humor styles in an Australian twin sample. Paper presentation given at the 14th Congress of the International Society for Twin Studies, Florence, Italy, April.